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Springfield Technical Community College

1977-78 Catalog



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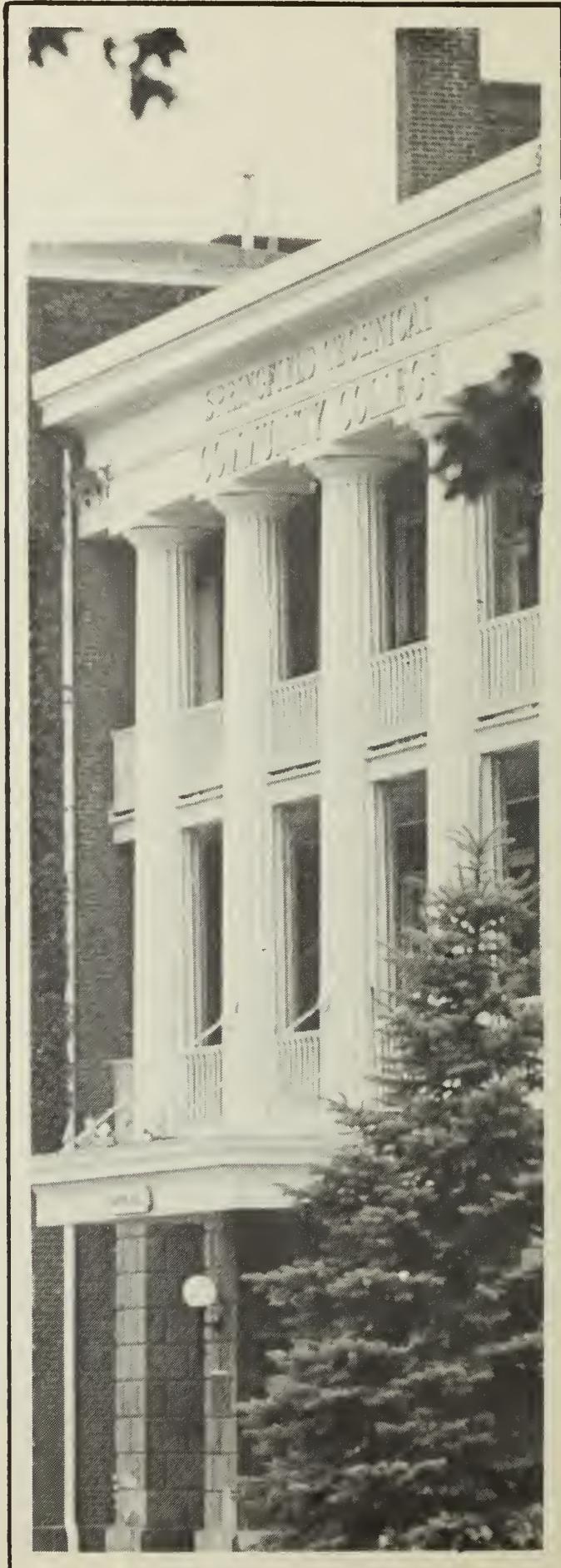


NEW ENGLAND
ASSOCIATION
OF SCHOOLS
AND COLLEGES
ACCREDITED MEMBER

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OF SCHOOLS
AND COLLEGES
ACCREDITED MEMBER

It is the policy of Springfield Technical Community College not to discriminate on the basis of sex in its educational programs, activities or employment policies as required by Title IX of the 1972 Education Amendments. Inquiries regarding compliance with Title IX may be directed to the Title IX Coordinator Mrs. Dorothy J. Pryor, Affirmative Action Officer, at One Armory Square, 781-6470.

This catalog is published as a convenient source of information for prospective students and for the general public. To allow for unforeseen developments that may occur along budgetary or other lines, the College reserves the right to add or withdraw courses and programs, or to revise any provision or requirement described herein.

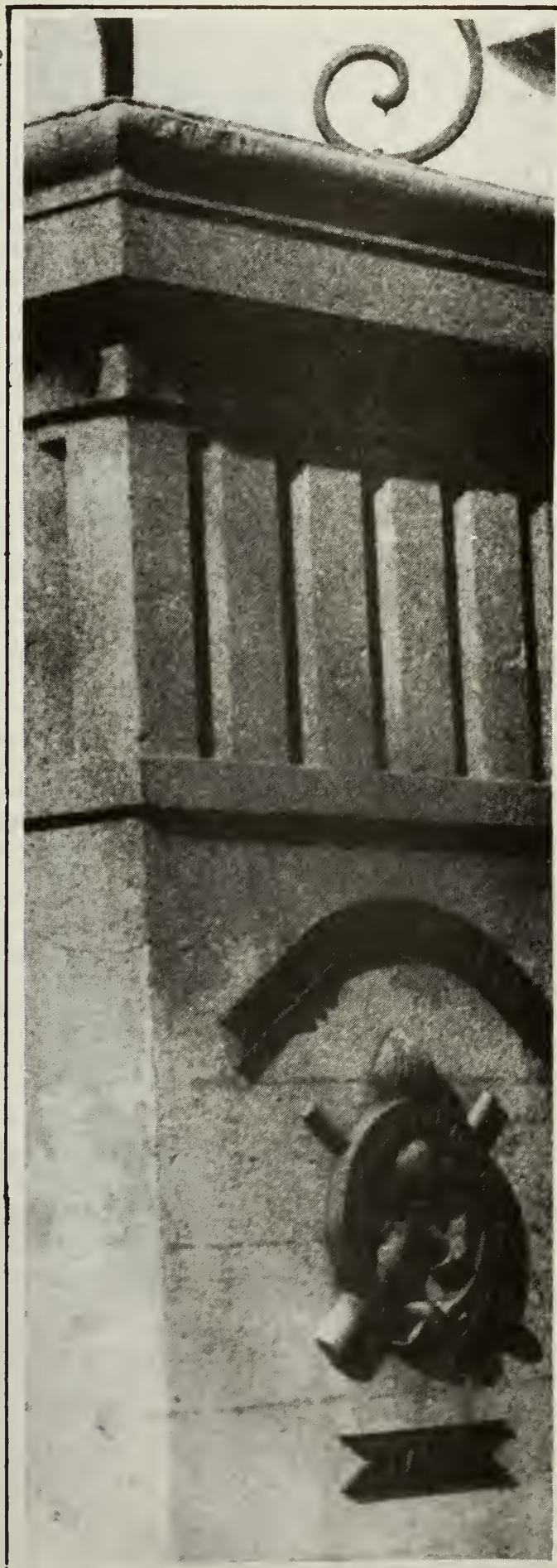


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ONE ARMORY SQ
SPRINGFIELD, MA 01102

DESIDERATA

Go placidly amid the noise & haste, &
remember what peace there may be in
silence. As far as possible without
surrender be on good terms with all persons.
Speak your truth quietly & clearly;
and listen to others, even the
dull & ignorant; they too have their
story. Avoid loud & aggressive persons,
they are vexations to the spirit. If
you compare yourself with others, you
may become vain & bitter; for always
there will be greater & lesser persons
than yourself. Enjoy your achievements
as well as your plans. Keep
interested in your own career, however
humble; it is a real possession in the
changing fortunes of time. Exercise
caution in your business affairs; for the
world is full of trickery. But let this not
blind you to what virtue there is;
many persons strive for high ideals; and
everywhere life is full of heroism.
Be yourself. Especially, do not feign
affection. Neither be cynical about love;
for in the face of all aridity &
disenchantment it is perennial as the grass.
Take kindly the counsel of the years,
gracefully surrendering the things of
youth. Nurture strength of spirit to
shield you in sudden misfortune. But do
not distress yourself with imaginings.
Many fears are born of fatigue & loneliness.
Beyond a wholesome discipline, be gentle
with yourself. You are a child of the universe,
no less than the trees & the stars; you have
a right to be here. And whether or not it
is clear to you, no doubt the universe is
unfolding as it should. Therefore
be at peace with God, whatever you conceive
Him to be, and whatever your labors & aspirations,
in the noisy confusion of life keep peace
with your soul. With all its sham, drudgery
& broken dreams, it is still a
beautiful world. Be careful.
Strive to be happy.

Found in Old Saint Paul's Church,
Baltimore; Dated 1692.



ACADEMIC CALENDAR '77-'78

1977 - 1978

| | |
|-------------------|----------------|
| Aug. 29 | Monday |
| Aug. 30 | Tuesday |
| Aug. 29 - Sept. 2 | Mon. - Fri. |
| Sept. 5 | Monday |
| Oct. 10 | Monday |
| Oct. 11 | Tuesday |
| Oct. 25 | Tuesday |
| Oct. 24 - 28 | Mon. - Fri. |
| Oct. 31 | Monday |
| Nov. 1 - 3 | Tues. - Thurs. |
| Nov. 11 | Friday |
| Nov. 15 - 16 | Tues. - Wed. |
| Nov. 23 | Wednesday |
| Nov. 24 - 25 | Thurs. - Fri. |
| Nov. 28 | Monday |
| Dec. 5 - 9 | Mon. - Fri. |
| Dec. 19 - 23 | Mon. - Fri. |
| Dec. 26 - Jan. 13 | |
| Jan. 6 | Friday |

1978

| | |
|---------------|----------------|
| Jan. 17 | Tuesday |
| Jan. 16 - 20 | Mon. - Fri. |
| Feb. 20 | Monday |
| Feb. 21 | Tuesday |
| March 14 | Tuesday |
| March 13 - 17 | Mon. - Fri. |
| March 20 | Monday |
| March 21 - 23 | Tues. - Thurs. |
| April 4- 5 | Tues. - Wed. |
| April 7 | Friday |
| April 14 | Friday |
| April 17 | Monday |
| April 19 | Wednesday |
| April 24 - 28 | Mon. - Fri. |
| May 15 - 19 | Mon. - Fri. |
| June 11 | Sunday |

FALL SEMESTER

| |
|--|
| Registration for Freshmen - Meetings with Advisors |
| Classes Begin - General Faculty Meeting |
| Add and Drop Week |
| Labor Day - No Classes |
| Columbus Day - No Classes |
| Follow Regular Monday Class Schedule |
| Mid-Semester Grades Due in Registrar's Office |
| Mid-Semester Break - No Classes |
| Classes Resume |
| Distribution of Mid-Semester Grades to Students' Advisors |
| PRE-REGISTRATION DAYS |
| Veterans' Day - No Classes |
| Student Schedules to Advisors for Review and Update with Students |
| Last Day to Drop a Course Without Penalty (End of 12th Week) |
| Thanksgiving Recess |
| Classes Resume - Distribution of Student Schedules for Spring Semester |
| First Add and Drop Period for Spring '78 Semester in Registration Center |
| Final Exam Week |
| Semester Break |
| Tuition Payment Due for Spring Semester |

SPRING SEMESTER

| |
|--|
| Classes Begin - General Faculty Meeting |
| Add and Drop Week |
| Washington's Birthday - No Classes |
| Follow Regular Monday Class Schedule |
| Mid-Semester Grades Due in Registrar's Office |
| Mid-Semester Break - No Classes |
| Classes Resume |
| Distribution of Mid-Semester Grades to Students' Advisors |
| PRE-REGISTRATION DAYS |
| Student Schedules to Advisors for Review and Update with Students |
| Good Friday - No Classes |
| Last Day to Drop a Course Without Penalty (End of 12th Week) |
| Patriots' Day - No Classes |
| Follow Regular Monday Class Schedule |
| Distribution of Student Schedules for Fall Semester |
| First Add and Drop Period for Fall '78 Semester in Registration Center |
| Final Exam Week |
| COMMENCEMENT |



general information



Springfield Technical Community College has, since its beginnings, been an exciting, viable and relevant institution of higher education dedicated to the community college concept: an open-door policy to all citizens in the community. Since STCC is the only public technical community college in the Commonwealth, the primary thrust of the institution is a strong emphasis on programs in the areas of Allied Health, Nursing, Dental Sciences, the Technologies, Engineering Sciences, Math and Natural Sciences, and Business Administration. In point of fact, more than 80% of our students are enrolled in career, technical, and engineering programs. The college also provides comprehensive courses in the Liberal Arts and Social Sciences and has a strong commitment to providing community service programs.

We who are educators need no longer demonstrate that the trained intelligence of men and women is vital to the health and development of any community; what we must continue to demonstrate, however, is that we do successfully train and develop the intelligence of our students so that they may achieve the fulfillment of informed and meaningful involvement in their own communities and in our common community of man.

From the array of diverse educational opportunities which Springfield Technical Community College offers, students are encouraged to seek courses of study which enable them to stretch their minds, to identify and perfect their capabilities and to employ these new capabilities positively within the community. To further this mission, our highly qualified faculty is dedicated to their students. Many of the faculty are scholars whose research has been recognized in their professions, but their first function at Springfield Technical Community College is to teach, thus much individual attention is given to students. Moreover, we sponsor numerous extracurricular activities and cultural events apart from formal academics, for we realize that learning and growth are found in a variety of experiences that occur in settings other than the classroom.

In the years that Springfield Technical Community College has been a creative and contributing force in the community, it has produced men and women who have entered the world with the training and sense of responsibility, with the competence and maturity, to help, each in his own way, to make this a better and healthier world. Whether their primary contributions have been made locally or in the wider community of man, their role has been constructive. Springfield Technical Community College is dedicated to making its contribution to society in the form of such men and women whose sense of responsibility to others is as high as their commitment to intellectual excellence.

Robert C. Geitz, President

THE COLLEGE

HISTORY

In 1947 the State Board of Education determined that the Commonwealth should establish a system of community colleges, and in 1958, the Massachusetts Board of Regional Community Colleges was created to oversee the master plan for the development of the community college system.

The concept of creating a post-secondary technical school in Springfield originated in 1964 when the City established Springfield Technical Institute.

In the fall of 1967, Springfield Technical Community College opened the historic gates of the vacated United States Armory and proceeded to establish itself as a leader in the community college system in the Commonwealth of Massachusetts.

An initial enrollment of 400 students and a faculty of 20 began what is now the largest and most comprehensive community college in the Commonwealth. The change from a city technical institute to a degree-granting community college resulted in STCC providing thousands of trained graduates for the career opportunities that exist in the Greater Springfield community.

The thirty-four acre campus contains a blend of the old and new. New academic facilities as well as historic buildings dating back to the American Revolution exist on this National Historic Landmark.

New facilities for the Humanities, Physical Sciences, Nursing, Allied Health Sciences and Engineering Technologies exist within the historic fence cast in the mid-1800's from old cannons.

STCC is proud of its brief but impressive history, and the College will continue to serve the citizens of the Greater Springfield community in meeting their educational needs.



PHILOSOPHY

One of the primary responsibilities of a democracy is to provide for the education of each citizen. The accomplishment of this objective is a major concern of the community college. Within budgetary limitations, Springfield Technical Community College maintains an open door to all citizens of

the community. It recognizes the needs of the inner city and welcomes its students who indicate likelihood of academic success at the college level.

OBJECTIVES:

The objectives of the College are:

1. To provide high-quality, low-cost education for qualified high school graduates who wish to complete two years of college.
2. To provide students with the opportunity for the development of social maturity through a well-balanced program of student activities.
3. To provide students with comprehensive services in academic and personal counseling, occupational guidance and job placement.
4. To provide opportunities for continuing education for adults residing in the area served by Springfield Technical Community College.
5. To provide for every student, regardless of race, sex, or age and in spite of any handicap, a genuinely equal opportunity to benefit from all of the courses, activities and services offered by the College.

A prime objective of this College is to educate its students to a high degree of competency in the career of their choice and to support that competency with a solid, working knowledge of mathematics, fundamentals of science, written and oral English, social sciences and in-depth exposure to the principles and the methodology of that career.

ACCREDITATION

The College is a member of the American Association of Junior Colleges and of the New England Junior College Council. The President of the College has associate individual membership in the New England Association of Schools & Colleges, and the College has been fully accredited by N.E.A.S. & C.

The College is approved by the Board of Collegiate Authority, Massachusetts Department of Education; by the Massachusetts Rehabilitation Commission; by the United States Office of Education for listing in the Directory of Higher Education; for the National Defense Student Loan Program; for federal assistance from any unit of the Department of Health, Education, and Welfare; by the United States Veterans Administration for the admission of veterans and war orphans; by the United States Department of Justice as a place of study for non-immigrant students; and by the United States Internal Revenue Service as a non-profit organization. Individual programs in the Allied Health Sciences are accredited as follows: Dental Assisting, Commission on Accreditation of Dental and Dental Auxiliary Educational Programs; Dental Hygiene, Commission of Accreditation of Dental and Dental Auxiliary Educational Programs, Medical Assistant, American Association of Medical Assistants; Medical Laboratory Technician, National Accrediting Agency for Clinical Laboratory Sciences; Nuclear Medicine, Joint Review Committee on Medical Education in Nuclear Medicine of the A.M.A., Nursing, National League for Nursing and Massachusetts Board of Registration in Nursing, Physical Therapist Assistant, American Physical Therapy Association, Radiation Therapy, Joint Review Committee on Medical Education in Radiologic Technology of the A.M.A., Radiologic Technology, Joint Review Committee of Medical Education in Radiologic Technology of the A.M.A.; and Respiratory Therapy, Joint Review Committee Inhalation Therapy Education

ADMISSIONS

ADMISSION

Springfield Technical Community College encourages applications without regard to age, sex, race, religion or national origin. Admission to the College requires a high school diploma or its equivalency. The Director of Admissions may determine in some cases that a mature, responsible adult may be admitted to the College without the diploma or its equivalency. This in no way guarantees such a student entrance into a specific academic program.

Every consideration will be given to any applicant who possesses a diploma without regard to the curriculum pursued in high school. The applicant should take note, however, of the numerous requirements demanded by specialized college programs.

A high school equivalency diploma (General Education Development Test GED) may be earned by passing tests administered by the College several times each year. Further information about the tests may be obtained from the Admissions Office.

Students are advised to study carefully special requirements that are established by the program into which they seek admission.

Some programs of the College require specific minimum scores to be achieved by the applicant on the Scholastic Aptitude Test (SAT) of the College Entrance Examination Board.

Admissions Telephone Numbers: 781-6470, 781-1314, 781-1315.

RE-ADMISSION

Any student who has been dismissed for academic deficiencies may be re-admitted by bringing his cumulative quality point average (CQPA) up to the minimum standard required by the College. (See Academic Standing)

Any student who has attended summer or evening school and has raised his CQPA to the acceptable level, thereupon should reapply formally to the Director of Admissions.

APPLICATION PROCEDURE

Students desiring admission to the College may obtain an application by writing to the Director of Admissions, Springfield Technical Community College, One Armory Square, Springfield, Massachusetts, 01105. Students attending high schools in close proximity to STCC may expedite the application process by asking their guidance department for an application form. Applications should be filled out completely and returned to the College as soon as possible. This application must be accompanied by a non-refundable application fee in the amount of \$10 (check or money order) payable to STCC. This is a required fee which goes directly into the General Fund of the Commonwealth. It is each applicant's responsibility to insure that a transcript of his high school marks is sent to the College. The Admissions Office cannot accept the responsibility for obtaining transcripts.

Springfield Technical Community College maintains an open-door admissions policy, but the rapidly increasing number of applicants necessitates early application for admission. Applicants should have their applications on file no later than January 31 for any given academic year. Successful candidates will be notified of their acceptance by April 15.

In addition, transcripts from all colleges previously attended must be submitted to the college.

APPOINTMENTS FOR INTERVIEWS

Although interviews are not required, applicants are encouraged to seek help with career choices by exploring various programs with the counselors and staff. Interviews may

be arranged by phoning or by writing the Admissions Office for an appointment, telephone 781-6470.



TRANSFER INTO STCC

Applicants who have had previous college experience must submit all college transcripts whether or not they are seeking transfer credit. The College accepts a maximum of 45 credits transferable into the College for courses taken at other institutions. Only courses in which the student has received a grade of C or better and are similar in content to those required in the student's program at STCC will be accepted.

Transfer applications are usually accepted for admission to the College in both September and January. January transfers are normally limited to Liberal Arts, General Studies, Business Administration, Data Processing and Engineering Transfer programs.

CLEP AND CHALLENGE EXAMINATIONS - ADVANCED PLACEMENT

The College may award up to 45 credits to persons who successfully complete examinations in specific subject areas given at the College under the aegis of the College Level Examination Program (CLEP), or a series of Challenge Exams developed by the College.

The CLEP examinations cover a wide range of disciplines and allow applicants to demonstrate proficiency in areas where they have acquired knowledge through non-traditional learning situations. Credits received by CLEP examinations allow the College to waive introductory courses which the student would normally be required to take.

The College has produced challenge examinations in subject matter areas not found in the CLEP battery so that people who wish to demonstrate competence in specialized areas may do so.

Students who feel that they possess above average competence in a subject area should not hesitate to consult the Director of Admissions for further information, consultation and testing. High scores on Advanced Placement Examination of the College Entrance Examination Board will be evaluated by the Admissions Staff. Specific scores as approved by the College may allow the student applicant to be exempted from certain courses.

MINIMUM PREREQUISITES FOR ADMISSION

| PROGRAM | DEGREE OR CERT. | LICENSE AFFILIATION OR DESIGNATION POSSIBLE | MATH. | SCIENCE | OTHER ACADEMIC AREA | ADD. REQ. |
|------------------------------|-----------------------|---|------------------------|------------------|---------------------------|-------------|
| Administrative Bookkeeper | Cert. | | | | | SAT |
| Adv. Metal Machining | Degree | | Alg 1, Geom, Trig | | | SAT |
| Automotive Technology | Degree | | Alg 1 | Physical | | |
| Bio-Medical Technology | Degree | | Alg. 2 | Physical | | SAT |
| Business Administration* | | | | | | |
| Accounting* | Degree | | Alg 2 not mandatory | | | SAT |
| Finance* | Degree | | but recom. | | | SAT |
| Management* | Degree | | | | | SAT |
| Marketing* | Degree | | | | | SAT |
| Civil Engineering Technology | Degree | | Alg 2 | Physical | | SAT |
| Cosmetology | Cert. | Nat'l Lic. Req. for Employ. | | | | SAT |
| Data Processing | Degree | | Alg 1, Recom. | | | SAT |
| Dental Assisting | Cert. | A.D.A.A. Nat'l Cert. | | Biology | Typing | SAT** |
| Dental Hygiene | Degree | | Alg 2 | Chem/Lab Bio/Lab | | SAT***; DHA |
| Early Childhood Education | Degree | | | | | SAT |
| Electrical Technology | Degree | | Alg 2 | Physical | | SAT |
| Electro-Mechanical | Degree | | Alg 2, Geom, Trig | Physical | | SAT |
| Electronic Technology | Degree | | Alg 2, Trig. | Physical | | SAT |
| Electronic Benchwork | Degree | | Alg 1, Trig. | Physical | | SAT |
| Engineering & Sci. Trans. * | Degree | | Alg 1,2,Trig | Chem, Physics | | SAT |
| Environ. Technology | Degree | Certification | Alg 1 | Chemistry | | SAT |
| Fire Science | Degree | | | | | SAT |
| General Studies | Degree | | | | | SAT |
| Graphic Arts | Degree | | Alg 1 | Physical | | SAT |
| Heat/Power/Air Cond. | Degree | Cert., 2nd class lic. | Alg 1 | Physical | | SAT |
| Landscape Technology | Degree | | Alg 1 | Physical | | SAT |
| Law Enforcement | Degree | | | | | SAT |
| Liberal Arts* | Degree | | Alg 2 | | | SAT |
| Machine & Tool Design | Degree | | Alg 2, Trig. | Physical | Mech. Draw | SAT |
| Medical Assistant | Degree | Nat'l Certificate | | | | SAT |
| Medical Laboratory Tech. | Degree | | Alg 2 | Chem, Biology | | SAT*** |
| Mental Health | Degree | Nat'l Org. of Human Ser. Edu. | | | | SAT |
| Nuclear Medicine Tech. | Degree | National Certification | Alg 2 | Chem, Bio, Phys. | | SAT |
| Nursing | Degree | R.N. | Alg 2 | Chem, Biology | | SAT*** |
| OSHA | Degree | | | | | SAT |
| Operating Room Technician | Degree | National Certificate | Alg 2 | Chem, Biology | | SAT |
| Physical Therapist Assistant | Degree | National Certificate | Alg 2 | Chem, Biology | | SAT*** |
| Radiation Therapy Tech. | Degree | National Certification | Alg 2 | Chem, Bio, Phys. | | SAT |
| Radiologic Technology | Degree | National Certification | Alg 2 | Chem, Bio, Phys. | | SAT |
| Respiratory Therapy | Degree | | Alg 2 | Chem, Biology | | SAT |
| Secretarial | | | | | | |
| Bilingual | Degree | Cert. Pro. Secretary | | | | SAT |
| Clerical Office Assistant | Cert. | | | | | SAT |
| Court Stenography | Degree | Cert. Short. Reporter, Ma. Short. Rep. Assoc. | | | | SAT |
| Executive | Degree | Cert. Pro. Secretary | | | | SAT |
| Legal | Degree | Cert. Pro. Secretary | | | | SAT |
| Medical | Degree | Cert. Pro. Secretary | | | | SAT |
| Special Student | | | | | | |
| Student Development | | | | | | |
| Telecommunications | Degree | | | | | SAT |

*University Parallel Program

**Minimum scores must total 750 combined verbal & math.

***Minimum scores must total 450 each in verbal & math.

TUITION AND FEES

TUITION FEE

The Commonwealth of Massachusetts has set tuition at \$150 per semester for State residents and \$441 for non-residents. Part-time resident students pay \$16 per credit, while part-time non-resident students pay \$37 per credit. The charge for auditing a course is set at \$21 per course. Under an agreement among the New England States, students from any of the six states may attend college in another of the six states for the same tuition as a resident of the state, provided that the program desired is not available in their state or that the community college is closer than that in the home state.

STUDENT ACTIVITY FEE

To promote athletics, student affairs, clubs and scholastic endeavor such as student publications, each student must pay a yearly student activity fee. The rate is set yearly by the student government. The fee is non-refundable.

PARKING FEE

Parking is limited on campus. Seniors may park on campus up to the limit of space. Parking fees will be established each year. Off-campus parking is available near the College for varying prices.

GRADUATION FEE

To cover the costs of the graduation ceremony and the graduate's cap and gown, the College assesses each student a \$20 fee. The student is charged this amount at the same time as he receives his fourth semester bill.

INSURANCE

The Commonwealth of Massachusetts requires each student to purchase through the College an accident insurance policy for a minimum charge. Optional plans under this policy may be purchased to provide hospitalization and twenty-four hour protection. Information about insurance will be sent to each admitted student. Students in Allied Health and Nursing are required to carry liability insurance in addition to the accident policy.

BOOKS AND SUPPLIES

Estimated costs for books and supplies vary by department, but \$100 to \$150 per year should pay for most books and supplies. The College bookstore, operated by an outside concern, provides at reasonable costs, many of the items that the student requires during his stay at STCC. Students are required to pay a lab fee for all courses. (See Summary of Tuition and Fees)

PAYMENT OF BILLS

All tuition and fees are payable before each semester begins. No deferred payment plans or partial payment plans are available. If payment is to be made by agencies or scholarship

programs, arrangements must be made in advance with the Financial Aid Office.

All student financial obligations must be satisfied before a student is considered properly registered. No grades, transcripts, recommendations or other services will be provided to students with outstanding financial obligations.

VETERANS

Veterans whose military service is credited to the Commonwealth of Massachusetts may attend State supported college programs tuition free. In addition to following the standard application procedure, veterans must bring a copy of their DD-214, separation papers, to the Office of Veterans Affairs.

Most veterans are entitled to federal benefits, and in order to take advantage of them, and all other services provided, veterans should plan to visit the Veterans' Office prior to enrollment.

TUITION REFUNDS

Tuition refunds are made only to those students who officially withdraw from the College. In order to do this, a student should personally or by written communication notify the Registrar of his decision. The College will, thereupon, refund a portion of the student's tuition according to the following schedule established by State regulations:

| | |
|------------------------------|------------|
| Withdrawal during first week | 90 percent |
| Withdrawal after one week | 70 percent |
| Withdrawal after three weeks | 50 percent |
| Withdrawal after four weeks | no refund |

It should be noted that no provision is made for refunds of any other fees or charges except for tuition.

The first \$35.00 of a tuition is non-refundable and is excluded from the refund computations.

SUMMARY OF TUITION AND FEES

The following fees are the approved charges authorized by the Massachusetts Board of Regional Community Colleges for the academic year and are subject to change without further notice.

| | |
|---|-----------|
| Application Fee (non-refundable) | \$ 10 |
| Registration Fee (deductible from tuition) | 35 |
| Tuition for Massachusetts Residents | 300 |
| Tuition for Out-of-State Students | 882 |
| Tuition, Part-time (per semester hour Massachusetts) | 16 |
| Tuition, Part-time (per semester hour Non-Residents) | 37 |
| Tuition, Audit Per Course | 21 |
| Student Activities Fee- | |
| Full-time Students | 40 |
| Part-time Students | 20 |
| Late Registration Fee | 5 |
| Change of Course Fee/Per Course | 3 |
| Make-up Examination Fee | 5 |
| Student Insurance (Mandatory) Included in Student Activities Fee. | 2 |
| Supplemental 24 hour Accident and Sickness Plan | 45 |
| Student Liability Insurance | 6 -12 |
| Transcripts | |
| First | no charge |
| Each Additional | 1 |
| Graduation Fee (payable at the beginning of the semester preceding graduation) | 20 |
| Laboratory Institutional Materials Fee (\$1.00 per credit hour is charged for all courses up to a maximum of \$17.00 per semester). | 1 |

FINANCIAL AID

As more and more people seek higher education, Springfield Technical Community College is making an intensive effort to aid its students in obtaining financial assistance in order that no young man or woman is denied a college education because of economic barriers. Based on an individual's financial need, the Financial Aid Office allocates funds to assist eligible students in paying for the cost of their college education. Assistance is provided through several sources, and a student may receive a combination of more than one type of help.

APPLICATION PROCEDURE

Springfield Technical Community College is affiliated with the College Scholarship Service (CSS). This organization's forms are used to provide the College with data, which is evaluated by the Financial Aid Officer when he determines a student's need.

Students being supported by their parents should obtain a copy of the Parents' Confidential Statement (PCS) from their high school guidance counselor or the Financial Aid Office of the College.

Married students and others not receiving financial support from their parents (and whose parents do not deduct them on their income tax) should use the Student's Financial Statement (SFS) available at the College.

The PCS or SFS should be mailed to the address indicated on these forms. List Springfield Technical Community College under Item No. 2 (PCS); under Item No. 16 (SFS).

In addition to the PCS or SFS, each applicant must also complete a separate Springfield Technical Community College Financial Aid Application obtained by writing to the Financial Aid Office of the College.

It should be noted that financial assistance received in any one year does not automatically guarantee aid in a subsequent year. A new application must be submitted each year.

The deadline date for filing the above forms is April 15. Applications received after this date may not receive consideration.

COLLEGE WORK-STUDY

Students earn \$2.25 per hour or better while working up to 15 hours a week when the College is in session. During vacation periods, worktime may be increased to 40 hours a week.

College Work-Study is particularly well-suited to the student who needs extra income to stay in school but feels a full-time, outside job might jeopardize his studies. Hours usually can be arranged to follow the student's class schedule.

BASIC EDUCATIONAL OPPORTUNITY GRANTS

BEOG is a federal grant program, which awards amounts up to \$1,000 based on financial need. Applications may be obtained from high school counselors or the College's Director of Financial Aid.

SUPPLEMENTARY EDUCATIONAL OPPORTUNITY GRANTS(SEOG)

Supplementary Educational Opportunity Grants are outright awards that do not have to be repaid. They are given to students of limited financial resources who would be unable to

attend college without such help. Grants range from \$200 to \$1,000 per year. SEOG recipients must match the amount of the grant with a scholarship.

NURSING STUDENT LOAN PROGRAM

Nursing students are eligible for Nursing Student Loans which enable them to borrow up to \$1,500 per year to finance their training. Terms for Nursing Loans are the same as for the National Direct Student Loans.

NATIONAL DIRECT STUDENT LOANS

Through National Direct Student Loans, a student may borrow up to \$1,500 in one year. Loans accumulate no interest while the student remains in college or continues his studies at another institution. Repayment begins nine months after the completion of the student's formal education. Loans are repaid over an extended period with a simple 3 percent interest rate. No payments are made when the borrower is in the military. National Direct Student Loans also have payment cancellation clauses for recipients who become teachers in eligible institutions.

NURSING SCHOLARSHIP PROGRAM

This program has been developed to assist students of exceptional financial need to attain a career in nursing. There is no matching fund requirement under the Nursing Scholarship Program. However, Nursing Scholarships usually are combined with Nursing Student Loans to provide a financial package to meet a student's individual need.

BOARD OF HIGHER EDUCATION SCHOLARSHIP

The Commonwealth of Massachusetts sponsors an excellent scholarship program for full-time students who are residents of the State. Applications may be obtained at any secondary school guidance office or by writing to the Scholarship Office, Board of Higher Education, Commonwealth of Massachusetts, 182 Tremont Street, Boston, Massachusetts 02111.

PRIVATE ORGANIZATION SCHOLARSHIPS

Several scholarships awarded by private organizations in Greater Springfield are also available. Requests for information should be directed to the Financial Aid Office, STCC.

H.E.L.P. LOANS

The Massachusetts Higher Education Loan Assistance Corporation guarantees student loans up to \$1,500 per year. Called HELP Loans, repayment begins after the student has completed his formal education. Such loans are obtained from Massachusetts banks which can provide complete details about terms.

LEEP PROGRAM

Eligible students enrolled in Law Enforcement courses may receive assistance through the Law Enforcement Education Program (LEEP). LEEP is supported by federal funds and administered by the United States Department of Justice.

ACADEMIC INFORMATION

ACADEMIC REGULATIONS AND HONORS

The academic year at Springfield Technical Community College is divided into two semesters with the first semester ending prior to Christmas vacation and the second semester resuming in the later part of January. A mid-semester recess is provided half way through each semester. The final week of each semester is devoted to final exams. Unless a formal change is published, the calendar in the STCC College Catalog is official.

ACADEMIC STANDING

The quality point index required to maintain acceptable academic standing is as follows:

1. Beginning of the second semester of enrollment, a quality point average of 1.5.
2. Beginning of the third semester of enrollment, a cumulative quality point average of 1.7.
3. Beginning of the fourth semester of enrollment, a cumulative quality point average of 1.9.

In order to graduate in an Associate Degree program, a student must satisfy the graduation requirements of his department and must have earned a cumulative quality point average of 2.0.

A student not meeting the aforementioned standards will be placed on academic probation and may be asked to withdraw if no academic improvement has taken place.

In most health programs, clinical affiliation is required. Students in health education must maintain a minimum quality point average of 2.3 in their major area of concentration to be accepted by a clinical facility for affiliation.

The accumulation of credits alone does not necessarily mean that a student is entitled to a degree. Normally, a student must earn a minimum of 60 credits in a specific curriculum. In many departments this minimum is exceeded.

GRADUATION REQUIREMENTS

The Massachusetts Board of Regional Community Colleges has statutory authority to confer associate degrees through the individual Community Colleges. Upon recommendation of the faculty, those candidates who qualify may be awarded the degree of Associate in Arts (A.A.) or Associate in Science (A.S.); Candidates for degrees shall have fulfilled the following requirements:

1. Completion of the courses required in the program in which the student is enrolled. He must present at least 60 credit hours of which a minimum of 15 must be in residence at the college and must meet all departmental requirements. In all degree programs except nursing, the student must have completed at least 20 credits in general education courses.
2. The student must have earned a minimum cumulative quality point average of 2.0.
3. The student must have satisfied all financial obligations to the College, including the payment of the graduation fee, at the beginning of the semester preceding graduation or when 45 credits have been earned toward graduation.
4. A National Direct Student Loan recipient must have completed the exit interview with the Financial Aid Officer or his representative.

Under certain circumstances, a student who has not met these requirements may be permitted to re-enter the day, evening or

summer division of the College in order to expunge deficiencies and to earn a degree by continued study.

EXAMINATIONS AND GRADES

Final examinations are scheduled for each course. At the end of each semester, all students receive written letter grades according to the following standards:

| Letter Grade | Qualitative Equivalent | Quality Points Earned Per Credit Hour |
|--------------|------------------------|---------------------------------------|
| A | 93 through 100 | 4.0 |
| A minus | 90 through 92 | 3.7 |
| B plus | 87 through 89 | 3.3 |
| B | 83 through 86 | 3.0 |
| B minus | 80 through 82 | 2.7 |
| C plus | 77 through 79 | 2.3 |
| C | 73 through 76 | 2.0 |
| C minus | 70 through 72 | 1.7 |
| D plus | 67 through 69 | 1.3 |
| D | 63 through 66 | 1.0 |
| D minus | 60 through 62 | 0.7 |
| F | Below 60 | 0.0 |
| I | Incomplete | no grade |
| W | Withdrawn | no grade |
| Au | Audit | non-credit* |

*Non-credit courses are not figured in the Quality Point Average.

The grade of Incomplete (I) indicates that a major requirement of the course has not been completed. Unless the deficiency has been made up within one month after the grade has been reported, the Incomplete grade automatically becomes an F on the student's permanent record.

MAKE-UP EXAMINATIONS

A student failing to take a semester examination may apply in writing to the Dean of Students and the instructor concerned, whereupon the Dean of Faculty may give permission to take a make-up examination. If, in their opinion, absence from the regularly scheduled examination was unavoidable, the student may take a make-up examination upon payment of a \$5 fee.

CLASS SCHEDULE

In the majority of cases, with the exception of Directed Study courses, three-credit courses meet three times a week and are of 50 minutes duration, or are 75 minutes long and meet twice a week. Exceptions may be found in career curricula and other special programs. Class hours begin at 8:00 a.m.

CLASS ATTENDANCE

The faculty of the College has voted to allow each instructor to set his own classroom attendance policy. Each faculty member will notify his students in writing at the start of each semester of his attendance policy, grading policy and course requirements. The Dean of Faculty will, upon request from an instructor, direct the Dean of Students to warn students when they have exceeded an instructor's attendance policy, and may, at the recommendation of the instructor, withdraw such a student from that class.

Off-campus activities, appropriately supervised and sponsored by faculty members, which appear to justify a student's absence from scheduled classes, must be approved in advance

by the Dean of Students. Such activities must be justifiable on grounds consistent with the educational program of the College. Whether a student is excused from class or examination to participate in such activities is determined by the instructor concerned.

MID-SEMESTER GRADES

At mid-semester, students will be graded by each of their professors. These grades will be recorded by the registrar and forwarded to each student's advisor for dissemination and discussion. These grades will not become part of a student's permanent record but are used to indicate his/her performance through the first half of the semester.

REGISTRATION

Registration is held during the first week of school of each semester. At this time students may add or drop courses. Admittance to a course at this time is, however, dependent upon the seats available. Students wishing to add a course after the first week of classes will be subject to a late fee of \$3 per course addition.

PRE-REGISTRATION

Pre-registration for the spring semester is held in October while pre-registration for the fall semester is held in March. Students expecting to return for the next semester must pre-register with their faculty advisors. It is the student's responsibility to seek out information concerning departmental course requirements prior to pre-registration. This may be done with the assistance of his department chairman, faculty advisor, or counselor.

COURSE CHANGES

Students are permitted to add and drop courses during the first week of classes without penalty. Any changes made thereafter will require the payment of a \$3 fee by the student to the Cashier's Office. No change will be permitted beyond the second week of classes.

PROGRAM CHANGES

A program change is defined as a change of major or department and, though permissible under certain guidelines, should be undertaken only with considerable thought and counsel. A student who is seriously considering a program change should seek immediate advice in the counseling center. The major requisite for this type of change is the consent of both the Chairman of the department that he wishes to leave and that of the Chairman of the department into which the student is seeking admission.

It should be noted that a student making such a change may suffer such consequences as the postponing of his graduation because of the necessity of taking prerequisite and core courses in his new department.

COURSE WITHDRAWAL

Students may withdraw from a course through the sixth week without being recorded as enrolled in that class. Students may withdraw from a course until the end of the twelfth week with a "W" grade recorded on his permanent record. Withdrawal

after the twelfth week will be recorded as a failing grade except in certain cases when the instructor and the Dean of Students find extraordinary circumstances meriting a "W" grade. All withdrawals must be made officially through the Registrar.

REPETITION OF COURSES

Any student who receives a grade in a course that is unsatisfactory to him may repeat that course and both grades will appear on his permanent record. However, only the second grade will be calculated into his quality point average. In order for this policy to be in effect, a student is required to inform the Registrar that he is repeating a course by completing a course repeat form concurrent with the actual repeating of the course(s).

AUDITING OF CLASSES

Students may attend certain classes as auditors (i.e., without receiving credit) under the following conditions:

1. Permission must be obtained from the Registrar during registration period.
2. All established charges for the course must be paid.
3. Priority in registration will be given to students who are registering in the course for credit.
4. Audit courses will be reflected on students' permanent record as Audit.

DEAN'S LIST

In order to recognize above-average academic performance, a Dean's List is published each semester. Any student carrying 12 or more semester hours who earns a 3.0 quality point average is placed on the Dean's List, providing that student has no grade less than a C in that semester.

PRESIDENT'S LIST

In an attempt to recognize extraordinary achievement, the College has instituted a President's List. In order to be eligible for this meritorious honor, a candidate must be a full-time day student carrying a minimum of 12 credit hours and must attain a quality point average (QPA) of 3.80.

HONOR SOCIETIES

The Alpha Nu Omega Honor Society has its Alpha Chapter at STCC. The purpose of the honor society is to stimulate within the student body a desire for self-improvement and intellectual growth by acknowledging academic achievement.

Membership in Alpha Nu Omega is open to any member of the student body who attains a 3.3 cumulative grade point average in a 12 credit semester toward an Associate Degree. A probationary period of one semester will be granted to all honor society members who drop to a 3.0 average. Members must have at least a 3.5 average to be eligible to run for office. At the end of the first semester, students having the required average must make their intentions of joining the honor society known to the Dean of Students. Induction into Alpha Nu Omega will be held in the middle of the second semester.

STUDENT INFORMATION

STUDENT RESPONSIBILITIES AND RIGHTS

To guarantee an atmosphere where sound intellectual and academic development is provided.

OBJECTIVES:

A. Student Responsibilities

1. To be knowledgeable of college regulations as established through the efforts of students, faculty and administration and the Massachusetts Board of Regional Community Colleges.
2. To respect and uphold the inherent rights of individuals and groups to independent action so long as it does not interfere with the parallel rights of others - minorities and majorities alike.

3. To comply with duly constituted civil authority.

4. To observe No Smoking signs in classrooms and all other designated areas.

B. Student Rights

1. To be guaranteed the right to attempt higher education.
2. To be guaranteed the freedoms to exercise rights of citizenship, association, inquiry and expression.
3. To be guaranteed the rights of privacy and confidentiality.
4. To be guaranteed the right of student representation in institutional decision making.
5. To be guaranteed procedural due process in disciplinary proceedings.

January 25, 1974

Recommendations of Sub-Committees of student advisory commissioners and Deans of Students as an addendum to the "Massachusetts Board of Regional Community Colleges Goals and Objectives."

CODE OF CONDUCT

The College assumes that its students will behave in such a way that will reflect creditably upon their homes, parents, College and community. To help provide an orderly atmosphere to nurture student development, certain regulations and policies have been developed over the years. The College further assumes that all students will abide by these regulations and policies. Violations of established College policy may result in disciplinary action up to and including suspension from the College.

The following is not an all-inclusive list of prohibited actions, but will serve as a guideline.

1. Academic dishonesty - such as plagiarism, cheating, use of unauthorized books or notes, knowingly furnishing false information, unauthorized reading, removing, duplicating, photographing, misuse of any college file, document, or record of any faculty, administration, staff or student.
2. Alteration of college records, documents, or identification instruments or the use of the same with the intent to defraud.
3. The possession or use of narcotics and dangerous drugs as defined by the laws of the Commonwealth of Massachusetts is prohibited on campus and at all college-sponsored off-campus activities. The use or possession of alcoholic beverages is restricted by the Massachusetts Board of Regional Community Colleges to special social events.
4. Intentional obstruction or disruption of normal college conduct, functions, processes, routines, college activities on or off campus, or activities of those invited to the campus for any purpose.
5. Physical abuse or misuse of persons or property on campus or at college-approved off-campus activities.

6. Theft, or unauthorized use or possession of any property (including keys, files, documents, library materials, etc.) owned, leased, or maintained by the college or by persons on the campus.

7. Weapons, firearms, explosives - possession, sale, or use of any weapon, firearm, explosives, or explosive device including fireworks. Permits will be issued by the Dean of Students for weapons being taken to the Rifle Range during scheduled Rifle Club meetings.

8. Failure to comply with directions of college faculty, staff and administration acting in the performance of their duties.

9. Violations of published college regulations including parking, motor vehicle movement, use of college buildings or equipment and any other regulations which may from time to time be enacted.

STCC JUDICIARY BOARD

1. Purpose

The Judiciary Board has been established to guarantee the procedural due process in disciplinary proceedings. The Board shall act as mediator in cases of violation of stated college policies to guarantee procedural fairness to accused students according to Massachusetts Board of Regional Community College policies (see Appendix 1).

2. Composition

The Judiciary Board shall consist of four students chosen by the Student Senate, three faculty chosen by the Faculty Senate and one member of the Student Personnel Services staff, who will act as chairperson.

3. Procedure

Charges may be brought, in writing, to the Dean of Students by faculty, administration, or students. The accused student will be interviewed by the Dean of Students and advised in writing of the charges brought against him. The student may accept the penalty suggested by the Dean of Students and, in writing, waive his right to a hearing, or he may request the Judiciary Board to review the charges and set the penalty.

At a hearing the student has no right to legal counsel since the Judiciary Board is not a court of law. The accused shall know the charges against him, bring witnesses in his behalf, may question adverse witnesses and may be assisted by an advisor of his own choice.

Decisions by the Judiciary Board shall be based on only material and information brought out during the hearing, and the burden of proof rests upon the person who made the accusation.

Decisions of the Judiciary Board shall be given to the student within 48 hours of the hearing and are final and binding.

The right to appeal to the President of the College is granted to all students only to determine whether the Judiciary Board conducted itself in an impartial manner and the accused was allowed to prepare his case; the Judiciary Board heard enough substantial evidence to justify a negative decision against the student; the penalty decided upon was in keeping with the gravity of the violation.

4.

The Dean of Students or the Judiciary Board may, on hearing enough evidence, impose one or a combination of the following procedures:

1. Warning: a student may be warned orally or in writing that his actions were inappropriate.

2. Restitution: a student may be required to pay the fair value of property stolen, destroyed, or damaged.

3. Restrictions: a student may be restricted from specified college privileges only for a certain period of time. The restriction(s) will be identified and a time limit established.
4. Probation: a sanction imposed after a warning has been issued, or immediately, in the case of a serious offense. Probation means that the student may not participate in any college function or event, but he may continue in class. Probation will be for a specific period of time.
5. Suspension: a suspended student may not participate in college events, nor attend class, nor enter the campus except to attend a hearing before the Judiciary Board or Dean of Students. The suspension will be set for a definite period of time.

CONSTITUTION OF STCC STUDENT ASSOCIATION

Preamble

This constitution is designed to establish an organization within the student body of Springfield Technical Community College.

Purpose

The purpose of the organization is to introduce, develop and promote activities for the general welfare of the student body which will be of mutual benefit to the administration, faculty and staff of the college.

Article 1 - Name

The name of this deliberative body shall be the Springfield Technical Community College Student Government, herein referred to as the Student Senate.

Article 2 - Membership

Membership in the student body or association shall be mandatory for all students carrying twelve semester hours or more. Part-time students shall be excluded from voting and membership in the student association.

Article 3 - Officers

Section 1

The officers of the Student Senate shall be: President, Vice President, Recording Secretary, Corresponding Secretary and Treasurer.

Section 2 - Duties

President:

1. The president shall preside over all meetings of the Student Senate. He shall vote only in case of a tie.
2. The president shall have the power to make emergency decisions for the student senate only if a meeting of that body cannot be called. Such decisions are subject to approval by the Student Senate.
3. The president shall represent the student body at official college ceremonies and upon other occasions where such representation is appropriate.
4. The president shall assume primary responsibility for the fulfillment of the Senate's purposes and shall carry out all formal duties, to this end, in cooperation with the Student Senate.
5. The president shall be a member ex-officio of all committees.
6. The president shall sign all vouchers.

Vice-President:

1. In the absence of the president, the vice-president shall

carry out the duties of the president and shall assume all powers and responsibilities, except as otherwise provided for.

2. The vice-president shall be a member ex-officio of all committees.
3. The vice-president shall be chairman of the board consisting of all club presidents and organizational presidents or leaders.
4. The vice-president shall be the representative to the following:

- a. Five College Council
- b. Student directions or grievance committee
- c. Student activities committee

Recording Secretary:

1. The recording secretary shall keep the accurate minutes of the meetings of the Student Senate and shall have a prepared report of the previous meeting to be read at every meeting.
2. The recording secretary shall note attendance at each meeting and shall report any excused or unexcused absence to the Senate.

Corresponding Secretary:

1. The corresponding secretary shall carry on and maintain all correspondence of the Student Government.
2. The corresponding secretary shall approve all official correspondence between student clubs and activities of the college and student organizations at other colleges and institutions of learning.

Treasurer:

1. The treasurer shall keep records of the accounts of the Student Association, Student Senate, Student Activities and clubs.
2. The treasurer shall submit a proposed budget for approval by the Student Senate for the Student Association the first week in October.
3. The treasurer shall render a financial report at regular Student Government meetings.

Parliamentarian:

1. He shall be appointed by the president and approved by the senate.
2. He shall be the official on all rulings dealing with procedure and the constitution.
3. He shall be chairman of the review board.

Article 4 - Student Senate Membership

Section 1

Each class (Freshman and Senior) shall have five duly elected class representatives. These representatives shall be known by the official title of senator.

Section 2

The student body as an entity shall be represented by five duly elected members to the representative body. These representatives shall be known by the official title of senator.

Article 5 - Student Government

Section 1

The Student Senate shall act as the chief legislative body of the Student Association and serve as a medium through which members of the Association may present ideas and suggestions for the improvement and general welfare of the entire student body.

Section 2

A quorum of the Senate shall consist of two-thirds of its members. Senate members shall discuss and evaluate suggestions for improvement of the general welfare of the entire student body.

Section 3

Senate members shall discuss and evaluate suggestions and present them in the form of resolutions or recommendations to the Student Senate. Such resolutions or legislation must be passed by the majority of the Student Senate. Senate members shall be responsible for keeping fellow students informed of the activities and decisions of the Student Senate.

Section 4

1. Regular meetings of the Student Senate shall be held once a week at a time and a place to be specified at the beginning of each semester or at the call of the president.
2. No meeting shall be held unless a quorum is present.
3. The Student Senate may call a special meeting of the Student Association at any time. Notice of this meeting must be posted at least two days in advance (on the bulletin board).

Section 5

Any Student Government member who has unexcused absences as determined by the Student Senate, for two consecutive meetings, will be subject to review by the Student Senate.

Article 6 - Student Activities Committee

Section 1

The membership of this committee shall consist of a chairman appointed from the Student Senate and five members of the Student Association. The president of the Student Senate shall select this committee subject to approval of the Student Senate.

Section 2

1. This committee shall review all applications for the organization of new student clubs and organizations and shall recommend to the Student Senate the acceptance or rejection of such applications.

Section 3

1. This committee shall assist any group of fifteen or more students to form a college club or activity.
2. This committee shall give a list of legally operating clubs to the Dean of Students each semester.
3. The constitutions of such clubs must be approved by this committee at its next scheduled meeting and then brought before the Senate for final approval.
4. The chairman of this committee or the faculty advisor shall have the authority to request to the Student Senate that an organization may be disbanded and its funds be frozen if it fails to comply with the rules and regulations of the Student Senate.
5. Only approved student activities shall receive money from the Student Senate.
6. Any student activity or club may present its case before the Student Senate when it believes it has not been given fair treatment.

Article 8 - Dues

Section 1

There will be an annual dues, called the Student Activity Fee, for all members as determined by the Student Senate and approved by the Massachusetts Board of Regional Community Colleges.

Section 2

Student activity fees are payable by all students as part of registration in college.

Article 9 - Amendments

Section 1

Any student may propose an amendment to the Constitution of the Student Association to the Student Senate.

Section 2

Any proposed amendment to the Constitution must be found to be in order and purposeful by two-thirds vote of the Student Senate.

Article 10 - Amendments of the By-Laws

By-laws to this Constitution must be reviewed by the Student Senate before being voted on. By-laws become effective on a two-thirds vote of the Student Senate.

Amendment on Impeachment

Procedure for impeachment will be presentation of a petition signed by not less than two-thirds of the student body calling for a referendum vote. Upon receipt of this petition the subject(s) shall be censured from all duties connected with his office until a general election can be held. The election shall be held in not more than one week's time and must consist of seventy percent of the student body.

Amendment to Article 8, Section 2

If this amendment is defeated by the Student Senate, it may be overruled by a majority vote of the student body.

Amendment to Article 3, Section 1

Any student government member may not hold an office in a club.

Amendment to Article 3, Section 2

Position of Student Trustee is a duly qualified member of the Student Government executive board.

Amendment to Article 3, Section 2

No student may hold an elected position(s) in the Student Senate in excess of four semesters.

PRIVACY RIGHTS OF PARENTS AND STUDENTS

In compliance with a federal law entitled Privacy Rights of Parents and Students, the College has established a policy to protect students from misuse of information in their personal folders and to allow students access to their own folders. The policy is summarized as follows:

All records will be kept in such a way as to guarantee their physical security. Data will be maintained in a computer so that only qualified college personnel will have access thereto on a clear "need-to-know" basis.

A record log or audit trail will be kept for all records showing name and department of all persons using records.

No records will be released to anyone without the informed written consent of the student concerned. A student will be notified whenever a court of law subpoenas his record.

Students may have general access to their records and the right to challenge records they believe to be inaccurate, incomplete, or to have been incorrectly disseminated. An exception of this right to access is the Parents Confidential Statements of their finances, which will not be released to a student without the informed written consent of the parent(s).

Students who wish to challenge information in their folders may petition in writing the Dean of Students who will hold a hearing before a committee made up of the Registrar of the College, the Dean of Students, a faculty member chosen by the Faculty Senate, a student chosen by the Student Senate and

the aggrieved student.

Photocopies of student records may be obtained from the Registrar at the cost of \$1. per page, except for transcripts of marks, the first of which is free.

SPECIAL STUDENT SERVICES PROGRAM

The Special Student Services Program attempts to service students whose needs are often bypassed in the more familiar student services categories. We have trained specialists to service:

1. Handicapped Students
2. Veterans
3. Black and Hispanic Americans

An important feature of our program is the provision of individual academic and vocational counseling by an appropriate specialist. Those students who for whatever reason suffer a linguistic and/or learning handicap will be given special tutorial assistance. The tutor will attempt to maintain an informal relationship with the student.

More often than not, problems regarding financial assistance, health services, etc., go unattended simply because students do not know where to go. Our staff will serve as a bridge to the appropriate personnel or agency for these students.

Students' interest and need for self-identity and community awareness is an acknowledged fact. We wish to incorporate into our program special classes and cultural activities to satisfy this need.

The Special Services Project was developed in 1973 through the efforts of students, faculty and staff to provide additional tutorial and counseling assistance for students encountering academic and personal difficulties at STCC. This project is funded through a grant from the United States Department of Health, Education and Welfare to supplement the services available to the student.

The Tutorial Assistance Program is an important component of Springfield Technical Community College. Through the services of this program, students in need of tutorial assistance receive tutoring in any academic field. The Tutorial Assistance Program Coordinator is located on the first floor of Building 16, Room 9 (directly below the Admissions-Registration Center).

Vocational aptitude tests and occupational information are available upon request.

The Special Services Project assists handicapped students in securing financial aid, special equipment and parking privileges. This office also provides bilingual tutoring and instruction for students who need help in developing proficiency in English.

The Project has offered several non-credit workshops in study skills and test taking. These workshops are geared to increase the effective use of study and preparation time and to assist students in gaining experience and confidence in test situations.

The SSP works closely with the regular counseling staff under the Dean of Students, the Financial Aid Officer, the Registrar and the Director of Admissions to provide students with comprehensive assistance.

THE LIBRARY

The library is located on the second floor of Building 27. Hours are 8 a.m. to 9 p.m. weekdays, except Fridays when the library closes at 5 p.m. It is not open on weekends or legal holidays; summer and vacation hours vary. All students, part- and full-time, day and evening school, may use the library resources and services.

Print Materials:

The library book collection exceeds 38,000 volumes. A small percentage of these are reference books, including encyclopedias, atlases, almanacs, and dictionaries, which must be used in the library. All other books may be charged out.

Over 280 journal subscriptions are received regularly. These include popular magazines as well as a wide variety of specialized journals covering all the fields relating to the STCC curriculum. Several different periodical indexes provide access to journal articles.

Other print materials include: newspapers from Springfield, Boston, New York, and Washington; college catalogs from schools throughout the country; a file of Spanish language materials; a collection of current fiction and non-fiction paperbacks; and a juvenile book collection maintained for the Children's Literature course but available to all library users.

Non-Print Materials:

The library maintains a large and diversified collection of non-print or audiovisual materials. These include 16mm films, video cassettes, audio cassettes, sound and silent filmstrips, 8mm sound and silent film loops, slides, records, and transparencies. Cassettes, records, filmstrips and slides may be signed out; all other materials may be used only in the audiovisual viewing room which has individual carrels with equipment for using all library audiovisual materials. Staff from the AV Software Department are available to help students with these machines.

Circulation:

All library materials are charged out and returned at the circulation desk. College catalogs and "room reserves" are located here as well. A student ID card is necessary in order to sign out materials.

There is a book drop outside of Building 16 where material may be returned when the library is closed.

Reference:

Any student who has difficulty locating books or information for class-related or personal use should ask at the reference desk. The Reference Librarian is available at all times to help students find information and to show them how to use the variety of research sources available in the library.

Cooperating Colleges of Greater Springfield

Through an agreement among the colleges in the Greater Springfield area, any STCC student may use the other college libraries by presenting an STCC ID. The participating institutions are: American International College, Bay Path Junior College, College of Our Lady of the Elms, Holyoke Community College, Springfield College, Western New England College and Law School, and Westfield State College. The Springfield City Library is also included in the group. As a result of CCGS, many additional resources are available. When using other area libraries, students are subject to their policies and regulations concerning loan periods and possible penalties.

for overdue materials.

Interlibrary Loans:

Students may use the library resources of all Massachusetts public college and university libraries through the WILL (Walk-in Interlibrary Loan) program by presenting an STCC ID. If a student needs a book which is unavailable in the Greater Springfield area or at the University of Massachusetts, the book can be borrowed through the mail on Interlibrary Loan. All requests for ILL are handled at the reference desk.

Miscellaneous:

Within the library are other facilities which students may wish to use. These include a copy machine at .10 a page, and a few typewriters, electric and manual, which may be used at no charge. There is a cassette duplicator available as well which may be used for students if time permits.

A student library handbook with complete details on materials and services is available to all students at the circulation and reference desks.

ATHLETICS:

Intercollegiate athletics are an integral and prominent part of STCC's educational objectives. Sports are seen here as vital and beneficial activities.

The Department of Athletics sponsors the following varsity sports for men: soccer, basketball, hockey, golf and baseball. For women, volleyball, basketball and softball are offered on an inter-collegiate level.

The STCC athletic program fosters inter-collegiate sports suited to its present size with an eye to our needs of the future. Participation is open to any full-time student in good academic standing. STCC is a member of the Massachusetts Community College Athletic Association which consists of the 15 state community colleges divided into two divisions:

| Eastern | Western |
|-------------------|-----------------------|
| Massachusetts Bay | Quinsigamond |
| Northern Essex | Greenfield |
| North Shore | Springfield Technical |
| Massasoit | Mt. Wachusett |
| Roxbury | Holyoke |
| Cape Cod | Berkshire |
| Bristol | Middlesex |
| Bunker Hill | |

Intramural athletics for all students, regardless of skill and experience, are held in touch football, basketball, bowling and softball. The College offers a full and varied women's sports program including bowling, volleyball, softball and gymnastics. Our intramural programs offer an opportunity for wide participation by all members of the student body.

STUDENT INFORMATION POST

The Student Information Post, located on the ground floor of Building 20, provides information on parking, school functions, building locations, other colleges and financial and tutoring assistance.

The S.I.P. staff can refer students to Day Care Centers, Alcoholic Counseling Centers and Mental Health facilities. S.I.P. works in association with the Student Drop-In Center located in Building 27, first floor. The Student Information Post is operated daily from 8 a.m. to 3 p.m. The Drop-In Center is open from 8 a.m. to 4 p.m.

COLLEGE BOOKSTORE

The college bookstore, located on the ground floor of Building 20 in the south wing, is open every school day from 8:30 a.m.

to 3 p.m. It is also open evenings for the convenience of night students. Books, school supplies, equipment for course work, as well as miscellaneous items are offered for sale, and used books are offered at discount prices. The best buys in used books are in December and May of each year. In addition, students can purchase their class rings, rent caps and gowns and arrange for magazine subscriptions and film developing at discount prices.

AWARDS

At commencement, an award to the graduating senior with the highest Quality Point Average is given.

At Honors Convocation, usually held the day preceding graduation, numerous awards and scholarships are given to those students whose academic record in their department is outstanding and to those who have contributed significantly to the total college community through their extra-curricular participation. These awards are:

President's Citation

President's Cup

Edmond P. Garvey Award

Teresina B. Thompson Award

Isabell V. Kendrick Award

Post Award (Nursing)

Nursing Faculty Award

John A. O'Leary Award (Nursing)

Mercy Hospital Award

Respiratory Care Award

Outstanding Achievement in Mental Health

Certificate for Excellence in Mental Health

Executive Secretaries of the Year

Legal Secretary of the Year

Medical Secretary of the Year

Shorthand Proficiency Awards

New England Telephone Company Awards to

Bilingual Secretarial Students

First Annual Bicultural Scholarship Award

Business Administration Outstanding Achievement Award

Association of Business Students Scholarship Award

Robert C. Geitz Award for Engineering Excellence

Landscape Award

Division of Cooperative Education Awards

Journalism Award

STCC Alumni Scholarships

AVAILABILITY OF THE SCHOOL VEHICLES

Springfield Technical Community College has a bus and three vans available for academic and social groups on a sign-up basis. One van is specifically designed and outfitted for students who are handicapped. For information regarding the use of a school vehicle, contact the office of the Dean of Students.

PARKING

Each year the College attempts to secure a maximum number of parking spaces in the general area of the campus for student parking and in September the College publishes an updated list of independent parking areas located in the general vicinity of the campus. It should be noted that these lots are not controlled by the College and any arrangements in regard to cost will have to be worked out between the student and the owner of the lot.

Please refer to the separate booklet "Traffic Rules and Regulations for Massachusetts Regional Community Colleges" available in the Dean of Students office.

CAREER CENTER

The Career Center is located in the Special Services and Counseling Center area. The center is open daily for students to drop in and browse. Materials available include: vocational brochures, occupational outlooks, government job statistic files, career aptitude tests, career handbooks, tape cassettes, curriculum-oriented job folders and a lending library. Appointments with a career counselor can be made through the center for students who wish further guidance.

PLACEMENT SERVICE

Springfield Technical Community College maintains a centralized placement service which is part of the student personnel program. Its services include educational placement and employment placement.

The Placement Office is located in the Counseling Center. The specific functions of the office are to maintain a current record of employment opportunities, to establish and maintain permanent credential records of STCC students and alumni and to conduct follow-up studies of graduates.

The placement service seeks to assist students and alumni in attaining positions which will best utilize their education, training, experience and abilities.

INSURANCE

The Commonwealth of Massachusetts requires each student to purchase through the College an accident insurance policy for a minimum charge. Optional plans under this policy may be purchased to provide hospitalization and twenty-four hour protection. Information about insurance will be sent to each admitted student. Careful consideration should be given to the additional coverage available. The cost is quite reasonable for the amount of coverage under the "optional" plan.

HEALTH INSURANCE CLAIM PROCEDURE

1. Claim report forms may be obtained from the College Health Service, Dean of Students Office.
2. Students are responsible for reporting claims in writing within 20 days, or as soon as reasonably possible, after an accident or first treatment for sickness.
3. The Claim Report and itemized bills are to sent to the insurer within 90 days. The company is not liable when the first report is submitted over one year after injury or first treatment for sickness. Address of insurer may be obtained from the nurse or Dean of Students Office.
4. Additional bills do not require another claim report. The student should send the bills, marked with the College name, to the insurer at the end of each 30 day period.
5. Instructions for completing a claim report are on the reverse side of the form. The College will not transmit these items except in unusual cases. It is solely the student's responsibility to submit reports and bills promptly.
6. Claim drafts are payable to medical service unless a receipted bill is presented.
7. The status of pending claims or details of payment may be obtained from the insurer.
8. The insurer will maintain pending files, correspondence and closed files.

MEDICAL AND EMERGENCY HEALTH SERVICE

Every student while on campus may seek the counsel and professional advice of the college nurse who has an office on the second floor of Building 20. The nurse is on duty every school day from 8 a.m. until 4 p.m. Her private phone is

734-1239. Wesson Memorial Hospital is located one block from the STCC campus. In case of any emergency, the number to call is 787-2562, Wesson Emergency.

OFF-CAMPUS RESIDENCE

The State Community College System has espoused a policy that will place a community college within a commuting distance of every student in the state. As a result of this policy, the community colleges are non-residential in philosophy and in fact.

Springfield Technical Community College realizes that it offers a wide variety of programs not available at other community colleges or institutions which attract many students who are not within commuting distance. In order to assist these non-commuting students, the College has found that in the past the facilities provided by the YMCA have more than met the needs of students.

Other housing accommodations are readily available in close proximity to the College. The College, however, assumes no responsibility for students living off campus, but will provide assistance in locating housing.

POLICY FOR PLANNING A STUDENT SOCIAL ACTIVITY

Student Activity Request Forms can be obtained in the Dean of Students Office, Building 16. All college-sponsored student social events must be scheduled at least two weeks prior to the activity. The student chairman and the advisor agree to be responsible for the conduct of all attending students. If police supervision is required, arrangements must be made through the Dean of Administration's Office, Building 16.

NO SMOKING AND FOOD POLICY

Smoking or the consumption of food or beverages is not allowed in any classroom or laboratory. Student lounges are available in each building for these purposes.

MASSACHUSETTS COMMUNITY COLLEGES STUDENT GRIEVANCE PROCEDURE

Definitions-I

A 'grievance' shall mean a complaint which has been filed by a grievant dealing specifically with an allegation concerning any form of discrimination or abrogation of student rights.

A 'grievant' shall mean a student or group of students at the College, or the Student Advisory Commission.

A 'student' shall mean an individual(s) enrolled at the College at the time of the alleged grievance.

Purpose-II

The primary purpose of this procedure is to secure prompt and equitable resolution of a grievance. This includes matters filed under Title IX, Education Amendments of 1972. Customary channels of communication shall be used wherever feasible, in seeking clarification of questions of concern, before the grievance procedure is utilized. Every effort shall be made to maintain confidentiality at each level of this procedure.

Time-III

The number of days indicated at each level shall be considered as a maximum. Every effort should be made to expedite the process. However, the time limits specified may be extended by mutual agreement of the grievant and the person against whom the grievance has been directed, or in the case of extenuating circumstances by his/her immediate supervisor.

Procedure-IV

Level One: Step One - The grievant shall first present his/her grievance orally and informally to the person against whom a grievance exists. This should be done in a reasonable period of time, within thirty (30) calendar days from the date of the grievance action or from the date that the grievant knew of the grievable act.

Step Two - If the grievance is not resolved within five (5) working days, the grievant may present in writing the allegations supporting the grievance, including, all of the known facts to the person against whom the grievance is directed. The person against whom the grievance is directed must respond, in writing, within five (5) working days to the grievant.

Step Three - If the grievance is not resolved within the said five (5) working days, the grievant may present it in writing to the supervisor of the person against whom the grievance is directed. The supervisor must respond in writing within five (5) working days, with his/her decision to the grievant.

Step Four - If the grievance is not resolved within the said five (5) working days, the grievant may present a formal claim in writing, including all the supporting statements and evidence, to the College Student Grievance Committee. Within ten (10) working days after receiving the written grievance, the committee shall state its decision in writing, with all supporting reasons and evidence to the grievant and the person against whom the grievance is directed.

Level Two: Within five (5) working days after receiving the decision from Level one - step four, the grievant may appeal the decision to the president of the college. This appeal shall be in writing and shall be accompanied by the original complaint and copies of all previous supporting statements, evidence, and decisions. The president shall evaluate the evidence and make his/her decision, in writing, within ten (10) working days after receiving the appeal, to all concerned parties. The decision of the president is final and binding, unless it is alleged that said decision was applied in an arbitrary, capricious, or non-uniform manner.

Level Three: If the grievant claims the decision of the president is rendered in an arbitrary, capricious, or non-uniform manner, the grievant may refer the matter to the Student Advisory Commission in writing within five (5) working days after receipt of the president's decision. If the Student Advisory Commission finds the allegations reported have some substance in fact, it may, within thirty (30) calendar days, file a written appeal to the President of the Massachusetts Board of Regional Community Colleges.

The President shall render his/her decision, in writing, within ten (10) working days, to the Student Advisory Commission. Said decision is final and binding.

Withdrawal-V

A grievance may be withdrawn by the grievant at any level without prejudice or record.

Hearings and Decisions-VI

At each of the above levels, the grievant and the person against whom the grievance is directed shall be given the opportunity to be present and to be heard. In addition, each party may present, examine, and cross-examine witnesses. All decisions at each level shall be in writing, with the exception of level one-step one, and shall include supporting reasons. Copies of all decisions and recommendations shall be given to both parties.

Reprisals-VII

No reprisals of any kind shall be taken against any participant in the grievance procedure.

Preservation of Records-VIII

After the final decision has been made, all supporting data shall be preserved for a period not to exceed three years. During this period, the grievant and/or the person against whom the grievance was directed may request in writing that the data be included in or excluded from his/her official college record.

Disclaimer-IX

In the adoption and implementation of this grievance procedure, it shall be understood that at no level is this a court of law and that rules of evidence shall not apply.

Membership of the College Student Grievance Committee-X

The composition of the College Student Grievance Committee shall consist of seven members: 1-classified personnel, 1-administrator, 2-faculty unit members, 2-students. The seventh member shall be from the same identifiable group as the person against whom the grievance has been filed.

In cases of discrimination as they apply to Title IX, the Affirmative Action Officer shall be a non-voting member of the Committee. No member who has a personal interest in the particular grievance shall be eligible to serve on the Grievance Committee. The Student Advisory Commissioner is prohibited from being seated on the College Student Grievance Committee.

Selection of the College Student Grievance Committee-XI

The selection of the College Student Grievance Committee shall be made from a random selection of candidates assigned to the Student Grievance Committee Pool. This pool shall consist of: 5-classified personnel, 5-administrators, 10-faculty unit members, 10-students. Assignment to the College Student Grievance Committee Pool shall be determined by election and/or appointment by the proper representatives.

Type of Hearing-XII

The hearing shall be a closed meeting (hearings commence at level one-step four).

XIII

A. Filing a grievance in accordance with the procedure set forth above in no way abrogates the student's right to file complaints with the appropriate state and federal agencies or with the courts. However, the grievant's initiation of proceedings in any other forum, waives his/her right to utilize the grievance procedure outlined above.

B. No provision herein contained shall operate to restrict the right of either party to follow the same procedure of appeal as outlined above.

C. All written responses shall be served by delivering in hand a copy to the appropriate person or by the mailing of a registered letter to the appropriate person at his/her residence or at his/her last known residence.

Approved by the Mass. Board of Regional Community Colleges 4/15/77.

THE COMMONWEALTH TRANSFER COMPACT

THE COMMONWEALTH TRANSFER COMPACT

Students planning to transfer to one of the Public universities or four-year colleges in Massachusetts should be familiar with the terms of the "Commonwealth Transfer Compact." If students qualify for Compact candidacy, they will be granted transfer credit for all college-level credits taken to earn the associate degree. To be eligible, the student must meet the following conditions:

1. Be accepted for transfer admission by one of the state-supported universities or four-year colleges in Massachusetts.

2. Earn an associate degree from one of the Massachusetts Regional Community Colleges with the following distribution of credits:

6 credits of English/Communications

9 credits of Behavioral/Social Sciences

9 credits of Mathematics/Sciences

9 credits of Humanities/Fine Arts

27 minimum remaining credits of other college-level work

60 credits minimum

To determine Springfield Technical Community College courses applicable under each of the above categories, refer to the core requirements for associate degrees. It should be noted that the above distribution of general education credits is greater than the distribution of core requirements for associate degrees granted by STCC. As a Compact student, the individual will have 1) completed at least 60 hours of work toward a baccalaureate degree and 2) completed at least 33 credit hours toward fulfillment of the general education requirements for the baccalaureate degree. Further, the individual will be subject to no special requirements beyond those specified as major/department and/or graduation requirements for students who originally enrolled in the receiving institutions as freshmen.

Some clarifications to the Compact are:

1. Students changing programs (e.g. liberal arts to engineering, secretarial science to liberal arts, etc.) may expect that it will require more than four semesters to complete the sequence of a new major.

2. "D" credit will be accepted toward the baccalaureate degree but a receiving institution is required to apply "D" credit toward a major only if it does so for "native" students - students who enrolled in the four-year institution as freshmen.

3. Course credit for transfers from programs not conforming to Compact specification will be evaluated by the receiving institution according to the applicability of those courses to the baccalaureate program in the major field of the student.

Students interested in consideration as Compact candidates should consult their faculty advisor to plan appropriate programs. Additionally, they should obtain an Application for Compact Candidacy from the Transfer Counselor. This should be completed and returned to the Counseling Center early in the semester immediately preceding the intended date of transfer.

The following represents courses offered at STCC which fulfill the intent of the Commonwealth Transfer Compact. These courses are classified under each of the following four categories of "General Education":

1. English/Communication

2. Behavioral/Social Science

3. Humanities/Fine Arts

4. Mathematics/Sciences

It should be clearly understood that in addition to these General Education courses, many of STCC's other courses are transferable. Students who plan to transfer should consult with his/her faculty advisor, department chairman and/or transfer counselor.

ENGLISH/COMMUNICATION

| No./Title | Credits |
|--|----------|
| 1004 - English Composition 1 | 3 |
| 1005 - English Composition 2 | 3 |
| 1006 - Business English | 3 |
| 1007 - Fundamentals of Speech | 3 |
| 1008 - Technical Report Writing | 3 |
| 1009 - World Literature 1 | 3 |
| 1010 - World Literature 2 | 3 |
| 1012 - English Literature 1 | 3 |
| 1013 - American Literature 1 | 3 |
| 1014 - American Literature 2 | 3 |
| 1015 - Irish Literature | 3 |
| 1016 - Introduction to Journalism | 3 |
| 1017 - Principles of Journalism | 3 |
| 1018 - Children's Literature | 3 |
| 1019 - English Literature 2 | 3 |
| 1020 - Advanced Speech | 3 |
| CE 1022 - English Composition 2: Writing | 3 |
| 1023 - Women in Literature | 3 |
| 1025 - Love and Marriage: Literary Perspectives | 3 |
| 1104 - A Survey of Black American Literature 1 | 3 |
| 1105 - A Survey of Major American & European Poets | 3 |
| 1107 - A Survey of Major American & European Novels | 3 |
| 1108 - A Survey of American & European Short Stories | 3 |
| 1115 - Directed Study in English | Variable |
| 1116 - Directed Study in Literature | Variable |
| 1119 - Directed Study in the Classics | Variable |
| 1122 - Directed Study in Speech | Variable |
| 1137 - The Bible as Literature | 3 |
| 1138 - A Survey of Black American Literature 2 | 3 |
| 1139 - Robert Frost: The Man & His Work | 3 |
| CE 1141 - Modern Tradition | 3 |
| 1143 - Literature of the Nazi Holocaust | 3 |

BEHAVIORAL/SOCIAL SCIENCE

| No./Title | Credits |
|---|---------|
| 4006 - Introduction to Anthropology | 3 |
| 4008 - Introduction to Sociology 1 | 3 |
| 4009 - Social Problems | 3 |
| 4010 - Sociology of the Family | 3 |
| 4012 - History of Western Civilization 1 | 3 |
| 4013 - History of Western Civilization 2 | 3 |
| 4014 - Principles of Economics 1 | 3 |
| 4015 - Principles of Economics 2 | 3 |
| 4017 - Comparative Economic Systems | 3 |
| 4081 - History of U.S. Before 1865 | 3 |
| 4082 - History of the U.S. Since 1865 | 3 |
| 4085 - Child Development Psychology | 3 |
| 4086 - General Psychology | 3 |
| 4087 - Principles of Normal/Abnormal Behavior | 3 |
| 4099 - Race and Ethnic Relations | 3 |
| 4083 - American Government and Politics | 3 |
| 4084 - European Comparative Government | 3 |

HUMANITIES/FINE ARTS

| No./Title | Credits | | |
|--|----------|---------------------------------------|------------|
| 1114 - Directed Study in Fine Arts | Variable | 3016 - Physics 22 | 5 |
| 1117 - Directed Study in Music | Variable | 3017 - Physics 23 | 5 |
| 1118 - Directed Study in Art | Variable | 3026 - Ecology | 4 |
| 1121 - Directed Study in Drama | Variable | 3028 - Microbiology | 4 |
| 1124,1125,1126 - College Theater Workshop 1,2,3 | 1,2 or 3 | 3031 - Physics 11 | 4 |
| 1127 - Introduction to the Theater | 3 | 3032 - Physics 12 | 4 |
| 8080 - Music Appreciation | 3 | 3051 - Investigations in Biology 1 | 4 |
| 8084 - Introduction to Music Theory & Harmony | 3 | 3052 - Investigations in Biology 2 | 4 |
| 8085 - Harmony and Composition | 3 | 3064-3076 - Programmed Physics | le |
| 8087 - Chorale | 1 | 3079 - Introductory Zoology | 4 |
| 8088 - Chorale | 1 | 3080 - General Biology 1 | 4 |
| 8089 - Chorale | 1 | 3081 - General Biology 2 | 4 |
| 8090 - Chorale | 1 | 3089 - Modern Geology | 3 |
| 8092 - Elements of Music | 3 | 3091 - Anatomy & Physiology 1 | 4 |
| 8093 - STCC Consort | 1 | 3092 - Anatomy & Physiology 2 | 4 |
| 8094 - Introduction to Keyboard Skills (Piano 1) | 3 | 3096 - Introductory Astronomy 1 | 4 |
| 8095 - Music for Early Childhood Education | 3 | 3097 - Introductory Astronomu 2 | 4 |
| 8096 - Art History 1 | 3 | 3100 - Principles of Biology 1 | 4 |
| 8097 - Basic Drawing | 3 | 3101 - Principles of Biology 2 | 4 |
| 8101 - Early Childhood Art Education | 3 | 3105 - Earth & Planetary Science 1 | 4 |
| 8102 - Art History 2 | 3 | 3106 - Earth & Planetary Science 2 | 4 |
| 8103 - Intermediate Keyboard Skills | 2 | 3109 - General Chemistry 101 | 4 |
| 8104 - Drawing Composition | 3 | 3110 - General Chemistry 102 | 4 |
| 8108 - Painting 1 | 3 | 3111-3118 - General Chemistry 21 & 22 | per module |
| 8109 - Painting 2 | 3 | 3311-3314 - Programmed Physics | per module |
| 8110 - Printmaking: Relief 1 | 3 | 3315-3318 - Programmed Physics | per module |
| 8111 - Printmaking: Relief 2 | 3 | | |
| 8112 - Basic Concepts of 2-Dimensional Design | 3 | | |
| 8113 - Basic Concepts of 3-Dimensional Design | 3 | | |
| CE 8115 - Pottery 1 | 3 | | |

MATHEMATICS/SCIENCES

| No./Title | Credits | |
|---------------------------------------|--------------|--|
| 2012 - Math 22 | 4 | |
| 2013 - Math 23 | 4 | |
| 2014 - Math 24 | 4 | |
| 2016 - Statistics | 3 | |
| 2020 - Engineering Mathematics | 3 | |
| 2076 - Contemporary Mathematics 1 | 3 | |
| 2077 - Contemporary Mathematics 2 | 3 | |
| 2080 - Finite Mathematics 1 | 3 | |
| 2081 - Finite Mathematics 2 | 3 | |
| 2082 - Analytic Geometry & Calculus 1 | 3 | |
| 2083 - Analytic Geometry & Calculus 2 | 3 | |
| 2085 - Analytic Geometry | 3 | |
| 2086 - Calculus 1 | 3 | |
| 2087 - Calculus 2 | 3 | |
| 2088 - Calculus 3 | 3 | |
| 2331-2333 - Programmed Math | 1 per module | |
| 2334 - Slide Rule | 1 | |
| 2341-2343 - Programmed Math | 1 per module | |
| 2344 - Introduction to Calculus | 1 | |
| 2350-2365 - Mathematics | 1 per module | |
| 2321-2323 - Programmed Math | 1 per module | |
| 3002 - Chemistry 1 | 4 | |
| 3005 - General Chemistry 21 | 4 | |
| 3006 - General Chemistry 22 | 4 | |
| 3010 - Physical Science 1 | 4 | |
| 3011 - Physical Science 2 | 4 | |
| 3012 - Physics 1 | 4 | |
| 3013 - Physics 2 | 4 | |
| 3015 - Physics 21 | 5 | |



DIVISION OF CONTINUING EDUCATION

Springfield Technical Community College offers through its Division of Continuing Education a wide range of offerings to meet local, social, economic, cultural, and civic needs. These offerings may be credit or non-credit, depending upon individual preference.

The Division of Continuing Education also fosters associations with various groups and organizations within the relatively large urban region served by the College. From time to time, conferences, institutes, and seminars are offered by the Division for those people in the region who have evidenced an interest in a particular subject or discipline. The offerings are carefully selected to meet predetermined community and individual needs.

Many times programs of instruction are generated by the employment picture persisting in the Springfield area. Employers themselves often instigate the development of new courses and program in collaboration with the College. College personnel constantly seek out new and developing areas requiring assistance from the school in the form of complete two-year technical programs, vocational preparatory courses lasting from several days to a year or more in length, and short vocational courses designed to up-grade the working man's skills. From these efforts a constantly expanding technical and career program base is developed, supplemented by special activities to serve both the short range and recurring needs of the community.

The Division of Continuing Education operates on a self-sustaining basis, according to the General Laws of the Commonwealth, designed to meet the needs of the community for higher education. As the program has developed it offers:

1. continuing education for adults, on both credit and non-credit basis, in general and specialized educational fields;
2. the opportunity to earn credit toward the associate degree, enabling the student to:
 - a. enter or re-enter the College as a full-time student;
 - b. complete degree requirements;
 - c. matriculate in the evening session and summer session.

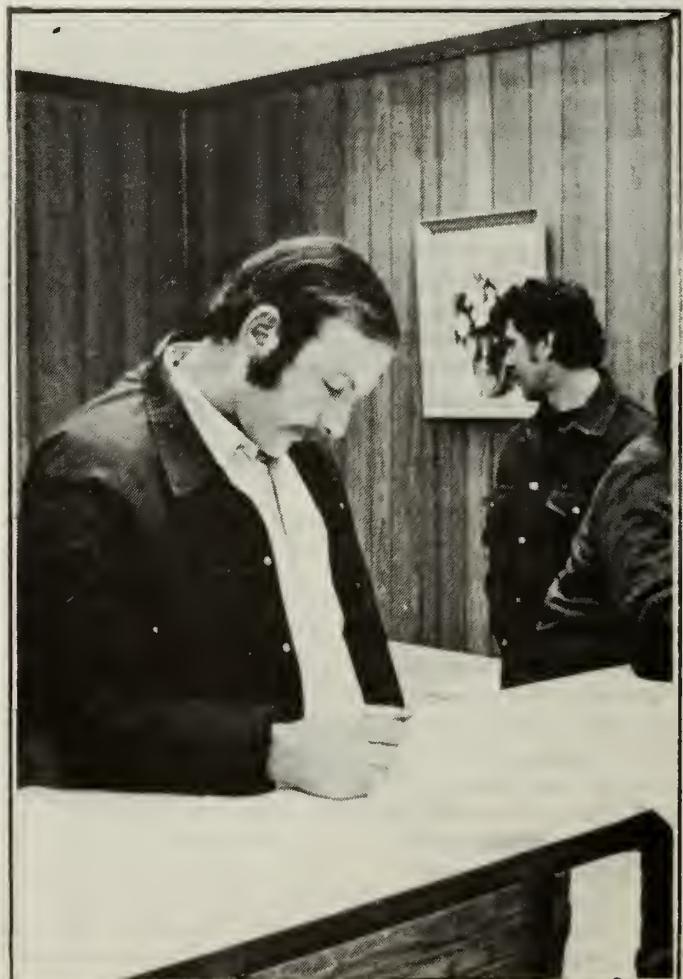
The Division of Continuing Education will assist students to pursue their educational objectives in every way possible.

Courses offered include: (1) freshman credit courses, for which a high school diploma (or its equivalent) is required; (2) advanced credit courses, requiring certain freshman prerequisites; (3) non-credit courses; (4) freshman courses as part of a program to provide entrance to the College as a full-time student.

These offerings are designed to furnish opportunities to: (1) resident students of Springfield Technical Community College to supplement the work of the regular college year by additional elective courses, (2) students of other colleges and universities to take courses for credit transferable to their resident college, and (3) high school students who wish to remove academic deficiencies before entering college in September. The offerings also seek to furnish an opportunity for intellectual pursuit and continuing education to those who may not wish to work for a college degree or who may already have one.

The two semesters of the Division closely correspond with the calendar of the day college. The evening session offers a balanced selection of courses in the principal areas of study offered by the College. Academic standards are the same as in the day program.

Any credit course in the Division of Continuing Education may be taken for no credit (NC) at the regular rates applying to credit courses. Non credit courses do not qualify for federal financial aid.



COURSES OF STUDY

ACADEMIC PROGRAMS

In an attempt to provide the most comprehensive variety of educational experiences and match these with the specific needs of the individual student, the College offers many academic programs. In the main, these fall into four categories: College transfer programs, career programs, cooperative education program and student development.

TRANSFER PROGRAMS

The transfer curricula are designed for students who plan to transfer to a senior college or university after completion of one or two years at STCC. The courses offered in these curricula are generally those required to provide a broad educational background before beginning specialization in a major field of study. A high quality of academic achievement, revealing seriousness of purpose and sound habits of study, is the most important qualification for successful transfer.

Four transfer programs are offered at Springfield Technical Community College:

1. Business Administration
2. Engineering and Science
3. General Studies
4. Liberal Arts and Sciences

Many students attending the College consider, at some point in their career, transferring to a four-year institution. There are numerous specific programs at STCC that are designed with that purpose in mind. Students enrolled in these programs should be in early and constant contact with a transfer counselor so that their course progress toward transferring to a four-year institution is expedited.

Springfield Technical Community College is a member of the Commonwealth Transfer Compact. With some limitations, an Associate Degree from STCC will be honored as a unit toward transfer to a state university or college. Further information relative to transfer from specific programs is available from the College's Transfer Counselor.

CAREER PROGRAMS

STCC offers a variety of Career Programs that are designed primarily for the individual seeking two years of training and immediate job opportunities upon graduation. Such Career Programs are available in the Engineering Technologies, Medical Health Services, Business Administration and Community Service Technologies.

Each of the Career Programs offers a two-fold objective: The student receives a general education background to provide him with a better understanding of the community around him and a technical preparation designed around a specific occupation.

Although the Career Programs are not intended to be transferable to a four-year college or university, many students do seek to continue their education beyond the two-year level. Students in this situation are advised to obtain advice from their college counselor early in their program.

COOPERATIVE EDUCATION PROGRAM

Via Co-op, as the program is known, students make career achievements while still in college. These achievements usually translate into meaningful jobs at graduation -- jobs which are usually at higher levels and better salaries than those obtained

by students who do not join Co-op.

The advantages of the program are many. Co-op allows a student to "test" the waters of his or her career choice; it involves the student on a daily basis in the human relations aspect of work. Since employers usually look for people with related work experience, it provides an inside track to jobs after graduation. A Co-op student is paid by his employer and thus substantial financial assistance is provided while he is still in school. Cooperative Education is an ideal way to bridge the gap between the classroom and the world of work.



INDIVIDUAL LEARNING CENTER—MATHEMATICS

The Individual Learning Center offers a curriculum which includes Basic Arithmetic, Elementary Algebra, Advanced Algebra and Trigonometry.

Through the use of audio and video tapes, and programmed textbooks, a student may proceed at a rate which is commensurate with his or her ability.

Additional assistance is provided by mathematics professors who are assigned to individual classrooms in the Center, and by student tutors who are also assigned to the Center. In addition to the regularly assigned classroom hours, a student may use the facilities of the Center any time that space is available.



CURRICULA OF THE COLLEGE

BUSINESS ADMINISTRATION/DATA PROCESSING/

SECRETARIAL SCIENCES

Accounting
Administrative Bookkeeper (1 year)
Bilingual Secretarial
Business Transfer
Clerical Office Assistant (1 year)¹
Court Stenography²
Data Processing³
Executive Secretarial
Finance
General Business
Legal Secretarial
Management
Marketing
Medical Secretarial
Small Business Management (1 year)

COMMUNITY SERVICES

Fire Protection and Safety Technology
Law Enforcement
Occupational Safety and Health Technology
Public Administration

ENGINEERING TECHNOLOGIES

Advanced Metal Machining Technology⁴
Automotive Technology
Bio-Medical Technology
Civil Engineering Technology⁵
Electrical Technology
Electro Mechanical Technology
Electronic Benchwork Technology
Electronic Technology
Environmental Technology
Graphic Arts Technology⁶
Heating/Power/Air Conditioning Technology
Landscape Technology⁷
Laser Electro-Optics Technology
Machine and Tool Design Technology
Solar Energy
Telecommunication Technology⁸

ENGINEERING AND SCIENCE TRANSFER

Engineering Transfer*

Chemical
Civil
Electrical
Environmental
Industrial
Mechanical

Science Transfer*

Biology
Chemistry
Mathematics
Physics
Pre-Dental
Pre-Engineering
Pre-Medical
Pre-Veterinary

^{*}(Degree awarded is A.S. in Engineering or A.S. in Science. Students may concentrate in the subject areas listed).

HEALTH EDUCATION/HUMAN SERVICES

Cosmetology (1 year)⁹
Cosmetology Management
Dental Assisting (1 year)
Dental Hygiene
Early Childhood Education
Medical Assistant
Medical Laboratory Technician
Mental Health
Nuclear Medical Technician
Nursing¹⁰
Operating Room Technician¹¹
Physical Therapist Assistant
Radiation Therapy
Radiologic Technology
Respiratory Therapist¹²

LIBERAL ARTS AND SCIENCES

Liberal Arts/General Studies*
Liberal Arts/Transfer*

Anthropology
Art
Economics
English
History
Music
Political Science
Psychology
Sociology

*(Degree awarded is A.A. in Liberal Arts Transfer or A.A. in Liberal Arts/General Studies. Students may concentrate in the subject areas listed).

Approved by the Massachusetts Board of Regional Community Colleges under the title of:

- (1) Office Assistant
- (2) Court Reporting
- (3) Business Data Processing
- (4) Advanced Metal Machinery Technology
- (5) Civil Technology
- (6) Printing Management
- (7) Landscape Construction
- (8) Production Technician (T.V.)
- (9) Cosmetology Assistant
- (10) Nurse Education
- (11) Operating Room Assistant
- (12) Respiratory Therapy

VETERANS INFORMATION

ACADEMIC STANDING

The quality point index required to maintain acceptable academic standing in an approved program of study in either the Day School or the Division of Continuing Education is as follows:

Beginning of the second semester of enrollment, a quality point average of 1.5.

Beginning of the third semester of enrollment, a cumulative quality point average of 1.7.

Beginning of the fourth semester of enrollment, a cumulative quality point average of 1.9.

For Continuing Education purposes, the completion of 12 semester hours will be considered the completion of a semester.

Students receiving benefits from the Veterans Administration are advised that if their quality point average does not permit them to remain in a program, they may continue to attend Evening Division courses at their own expense until their average allows them to re-enter the program.

Veterans are cautioned that the V.A. will not provide benefits to repeat a course which has been previously passed, nor will they support courses which do not meet the requirements for an approved program of study.

Students receiving benefits from the Veterans Administration are advised that benefits will be extended only for the normal length of time that an approved program is designed to encompass. Full-time students must complete Associate Degree Programs in two years. Part-time students will receive reduced benefits for the extended period of time necessary to complete their program of study. Specific questions about benefits, program approval, and eligibility will be answered by the V.A. office on campus.

ADD DROP LIMITATIONS AND PENALTIES

A student may add or drop a course within one week of the last registration day in either the Day School or the Division of Continuing Education without penalty; thereafter, a \$3 late fee is charged. (Refer to Page 10) The final date for adding a course is two weeks from the first day of classes.

GRADING PROCEDURE AND UNSATISFACTORY GRADES

STCC makes use of a scale from A to F converted into quality points which are utilized in formulation of a cumulative average. A grade of F equals 0 quality points and is unsatisfactory. A D- equals .07 and may count toward a degree if the quality point cumulative average is maintained with respect to degree specifications. (Refer to Page 9).

Students receiving Veterans Administration benefits are advised that any non-punitive grade such as audit, incomplete, or withdrawal must be calculated into the student's quality point average at the rate of 0 quality points.

WITHDRAWALS AND ABSENCES

All students are required to notify the registrar of Withdrawals or terminations. Attendance procedures are at the discretion of the faculty.

Students receiving Veterans Administration benefits will be considered to be making satisfactory progress in each course each semester at the following intervals:

1. If their name appears on the official class list certified by the instructor at the end of the official add/drop period.

2. If they receive a mid-semester grade.

3. If they receive a final grade.

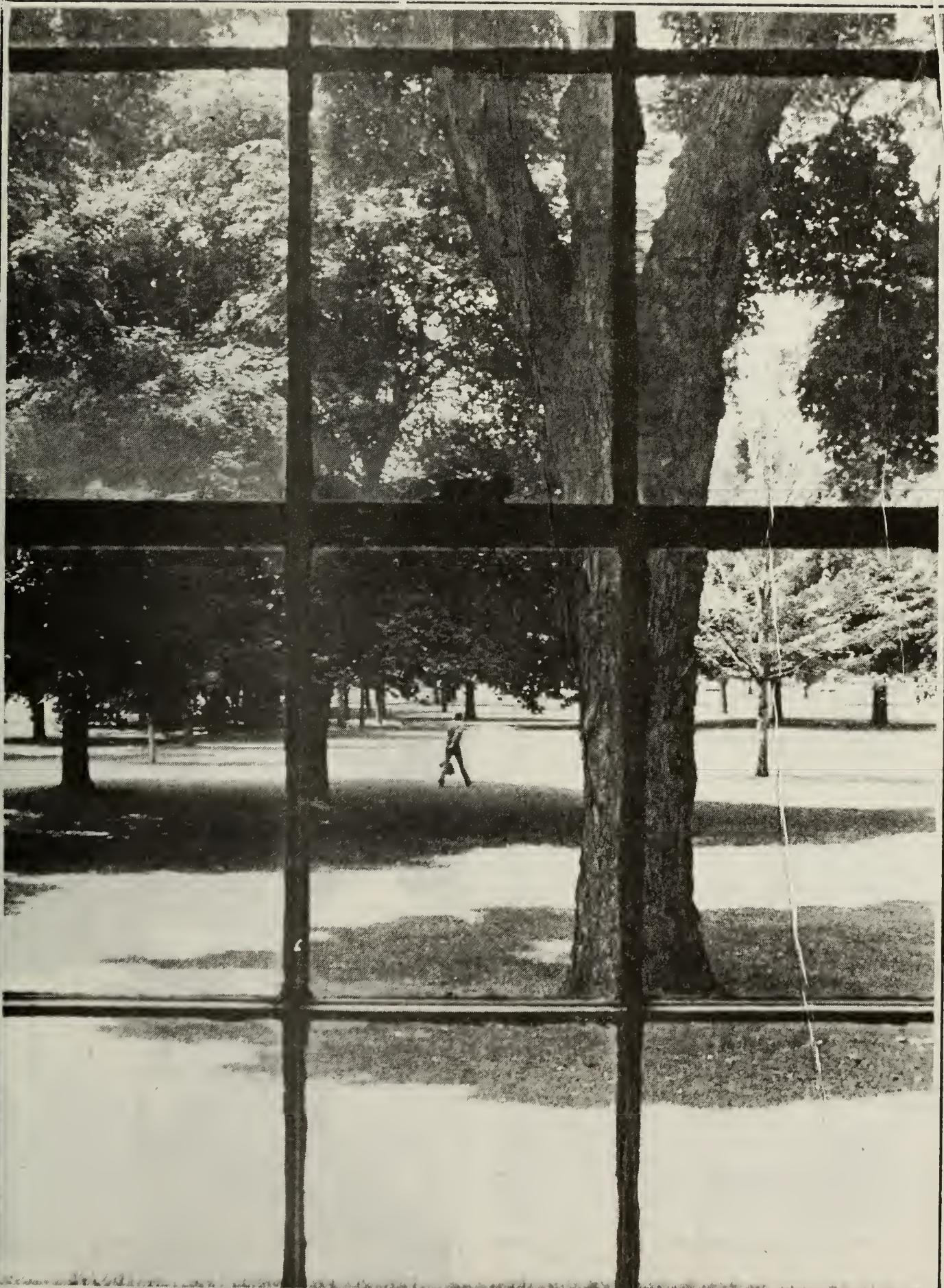
In the event any of 1.) through 3.) does not occur, the V.A. will be notified within 30 days after the enrollment report or grade report has issued that said veteran is not enrolled in the course.

Faculty members may request the Dean of Students to withdraw a student for excessive absences.



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UNIVERSITY PARALLEL PROGRAMS

BUSINESS ADMINISTRATION TRANSFER

Two associate degree options are available for transfer students:

1. The Business Administration Program (A.S. degree) or
2. The Liberal Arts: Business Administration Program (A.A./General Studies degree)

In either case, the selection of electives is crucial. University Business Administration departments have different policies relative to the general and business courses which will be accepted for transfer credit. Thus, it is essential that any student entering the transfer program, at the outset, carefully plan his course selection and sequence. This is best done in consultation with an academic advisor. The responsibility for selecting courses that will satisfy the requirements of the transfer institution, however, is solely the student's.

It should be noted that the Business Administration Department of the University of Massachusetts has requirements somewhat different from other area four-year colleges. Thus, a transfer program for the University of Massachusetts requires a careful structuring and will typically involve more liberal arts courses and fewer business courses during the first two years of study. A proper sequence can best be structured through the Liberal Arts option. For specific details on departmental and academic regulations, as well as course selection, elective requirements and course description, please refer to that section of the catalog under Business Administration.

Freshman Year (Common Requirements for both programs)

SEMESTER 1

| No. | Course Title | Class | Lab | Credits |
|------|------------------------------|-------|-----|---------|
| 1004 | English Composition 1 | 3 | | 3 |
| | Meth Elective | 3 | | 3 |
| 5023 | Accounting 1 | 5 | | 4 |
| | Business Department Elective | 3 | | 3 |
| 6001 | Computer Concepts | 4 | | 4 |
| | | 18 | | 17 |

SEMESTER 2

| No. | Course Title | Class | Lab | Credits |
|------|------------------------------|-------|-----|---------|
| | English Elective | 3 | | 3 |
| | Math or Statistics Elective | 3 | | 3 |
| 5024 | Accounting 2 | 5 | | 4 |
| | Social Science Elective | 3 | | 3 |
| | Business Department Elective | 3 | | 3 |
| | | 17 | | 16 |

Business Administration/Associate in Science (Senior Year Courses)

SEMESTER 3

| No. | Course Title | Class | Lab | Credits |
|------|------------------------------|-------|-----|---------|
| 4014 | Economics 1 | 3 | | 3 |
| 5048 | Business Law 1 | 3 | | 3 |
| | Business Department Elective | 3 | | 3 |
| | Business Department Elective | 3 | | 3 |
| | General Elective | 3 | | 3 |
| | | 15 | | 15 |

SEMESTER 4

| No. | Course Title | Class | Lab | Credits |
|------|------------------------------|-------|-----|---------|
| 4015 | Economics 2 | 3 | | 3 |
| | Law Elective | 3 | | 3 |
| | Business Department Elective | 3 | | 3 |
| | Business Department Elective | 3 | | 3 |
| | General Elective | 3 | | 3 |
| | | 15 | | 15 |

Associate in Arts/General Studies (Emphasis in Business Administration)

SEMESTER 3

| No. | Course Title | Class | Lab | Credits |
|------|---------------------|-------|-----|---------|
| 4014 | Economics 1 | 3 | | 3 |
| | Literature Elective | 3 | | 3 |
| | Humanities Elective | 3 | | 3 |
| | Elective | 3 | | 3 |
| | Elective | 3 | | 3 |
| | | 15 | | 15 |

SEMESTER 4

| No. | Course Title | Class | Lab | Credits |
|------|-------------------------|-------|-----|---------|
| 4015 | Economics 2 | 3 | | 3 |
| | Social Science Elective | 3 | | 3 |
| | Humanities Elective | 3 | | 3 |
| | Elective | 3 | | 3 |
| | Elective | 3 | | 3 |
| | | 15 | | 15 |



ENGINEERING & SCIENCE TRANSFER PROGRAM

The Engineering and Science Transfer Programs at STCC are for individuals who are interested in earning a Bachelor of Science Degree in one of the Engineering disciplines (Chemical, Civil, Electrical, Environmental, Industrial or Mechanical Engineering) or in Biology, Chemistry, Mathematics, Physics, or Pre-Medicine/Pre-Dentistry/Pre-Veterinary.

Each of these curricula provides a student with a fundamental background in science, mathematics and the humanities, and supplements it with technical electives from the principle engineering and science disciplines. They permit a student to earn his Associate's Degree in two years and to transfer to a four-year college or university with a junior level standing.



ENGINEERING TRANSFER

SEMESTER 1

| No. | Course Title | Class | Lab | Credits |
|---------|-----------------------------------|-------|-----|---------|
| 2350-53 | Mathematics (Engr. Calculus 21) | 4 | | 4 |
| 3005 | General Chemistry 21 | 3 | 3 | 4 |
| 6154 | Intro. To Engineering 21 | 2 | 3 | 2 |
| 2335 | Sliderule Math for Engineers | 1 | | 1 |
| 6241 | Prog. Engineering Graphics Mod. 1 | | 3 | 1 |
| ----- | Social Science Elective | 3 | | 3 |
| | | 13 | 9 | 15 |

SEMESTER 2

| No. | Course Title | Class | Lab | Credits |
|---------|-------------------------------------|-------|-----|---------|
| 2354-57 | Mathematics (Engr. Calculus 22) | 4 | | 4 |
| 3006 | General Chemistry 22 | 3 | 3 | 4 |
| 3015 | Physics 21 | 4 | 3 | 5 |
| 6175 | Intro. to Engr. 22 - Computer Prog. | 3 | | 3 |
| ----- | Social Science Elective | 3 | | 3 |
| | | 17 | 6 | 19 |

SEMESTER 3

| No. | Course Title | Class | Lab | Credits |
|---------|---------------------------------|-------|-----|---------|
| 2358-61 | Mathematics (Engr. Calculus 23) | 4 | | 4 |
| 3016 | Physics 22 | 4 | 3 | 5 |
| 6176 | Senior Seminar/Engineering | 1 | | 0 |
| ----- | Technical Elective | 3 | | 3 |
| ----- | Humanities Elective | 3 | | 3 |
| ----- | Elective | 3 | | 3 |
| | | 18 | 3 | 18 |

SEMESTER 4

| No. | Course Title | Class | Lab | Credits |
|---------|-------------------------------------|-------|-----|---------|
| 2362-65 | Mathematics (Engr. Calculus 24) | 4 | | 4 |
| 6224 | Engineering Measurements & Analysis | 2 | 3 | 3 |
| ----- | Technical Elective | 3 | | 3 |
| ----- | Humanities Elective | 3 | | 3 |
| ----- | Elective | 3 | | 3 |
| | | 15 | 3 | 16 |

*By choosing the appropriate Technical and General Electives in the 3rd & 4th semesters a student can concentrate in Chemical, Civil, Electrical, Environmental, Industrial or Mechanical Engineering.

Minimum Grade Requirements: A student in Mathematics or the Natural Sciences may complete an individual course with a grade of "D" if his major discipline will accept such a grade. However, a student electing the Biology Option must complete the program with a "C" (2.0) average.

Engineering Science Transfer students will not be allowed to continue in the program if they receive two consecutive grades below "C" (1.7) in either their mathematics courses, Math 2350-53 and 2354-57, or their chemistry courses, 3005 and 3006. Any student receiving grades below the above stated ones may petition a committee, consisting of the Department Chairman, and a student representative of the department chosen by the Department Chairman, for reinstatement. Reinstatement will be automatically allowed if the student agrees to repeat the two courses before beginning his senior year and receiving grades of "C" or higher in both of them. Reinstatement may also be allowed by the committee under other circumstances.

BIOLOGY OPTION**SEMESTER 1**

| No. | Course Title | Credits |
|---------|---------------------------------|---------|
| 2350-53 | Mathematics (Engr. Calculus 21) | 4 |
| 3005 | General Chemistry 21 | 4 |
| 3080 | Biology 1 | 4 |
| 1004 | English Comp. 1 | 3 |
| 4008 | Intro. to Sociology | 3 |
| | | 18 |

SEMESTER 2

| No. | Course Title | Credits |
|---------|---------------------------------|---------|
| 2354-57 | Mathematics (Engr. Calculus 22) | 4 |
| 3006 | General Chemistry 22 | 4 |
| 3081 | Biology 2 | 4 |
| 1005 | English Comp. 2 | 3 |
| 4086 | General Psychology | 3 |
| | | 18 |

SEMESTER 3

| No. | Course Title | Credits |
|-------|-------------------------|---------|
| 3125 | Organic Chemistry | 4 |
| ----- | Biology Elective | 4 |
| ----- | Social Science Elective | 3 |
| ----- | General Electives (2) | 6 |
| | | 17 |

SEMESTER 4

| No. | Course Title | Credits |
|-------|-----------------------|---------|
| 3126 | Organic Chemistry | 4 |
| ----- | Biology Elective | 4 |
| ----- | Humanities Elective | 3 |
| ----- | General Electives (2) | 6 |
| | | 17 |

CHEMISTRY OPTION**SEMESTER 1**

| No. | Course Title | Credits |
|---------|--------------------------------------|---------|
| 2350-53 | Mathematics (Engr. Calculus 21) | 4 |
| 3005 | General Chemistry 21 | 4 |
| 1004 | English Comp. 1 | 3 |
| ----- | Social Science Elective | 3 |
| ----- | Foreign Language/Humanities Elective | 3 |
| | | 17 |

SEMESTER 2

| No. | Course Title | Credits |
|---------|--------------------------------------|---------|
| 2354-57 | Mathematics (Engr. Calculus 22) | 4 |
| 3006 | General Chemistry 22 | 4 |
| 3015 | Physics 21 | 5 |
| 1005 | English Comp. 2 | 3 |
| ----- | Foreign Language/Humanities Elective | 3 |
| | | 19 |

SEMESTER 3

| No. | Course Title | Credits |
|-----------|---------------------------------|---------|
| 2358 - 61 | Mathematics (Engr. Calculus 23) | 4 |
| 3125 | Organic Chemistry | 4 |
| 3016 | Physics 22 | 5 |
| ----- | Technical Elective | 3 |
| | | 16 |

SEMESTER 4

| No. | Course Title | Credits |
|---------|---------------------------------|---------|
| 2362-65 | Mathematics (Engr. Calculus 24) | 4 |
| 3126 | Organic Chemistry | 4 |
| 3127 | Analytical Chemistry | 4 |
| ----- | Technical Elective | 3 |
| ----- | Social Science Elective | 3 |
| | | 18 |

MATHEMATICS OPTION**SEMESTER 1**

| No. | Course Title | Credits |
|---------|--------------------------------------|---------|
| 2350-53 | Mathematics (Engr. Calculus 21) | 4 |
| 3005 | General Chemistry 21 | 4 |
| 1004 | English Comp. 1 | 3 |
| ----- | Social Science Elective | 3 |
| ----- | Foreign Language/Humanities Elective | 3 |
| | | 17 |

SEMESTER 2

| No. | Course Title | Credit |
|---------|--------------------------------------|--------|
| 2354-57 | Mathematics (Engr. Calculus 22) | |
| 3006 | General Chemistry 22 | |
| 1005 | English Comp. 2 | |
| ----- | Social Science Elective | |
| ----- | Foreign Language/Humanities Elective | 1 |

SEMESTER 3

| No. | Course Title | Credit |
|---------|---------------------------------|--------|
| 2358-61 | Mathematics (Engr. Calculus 23) | |
| 2089 | Linear Algebra | |
| 3031 | Physics 11 or equiv. | |
| ----- | Humanities Elective | |
| ----- | Social Science Elective | 1 |

SEMESTER 4

| No. | Course Title | Credit |
|---------|---------------------------------------|--------|
| 2362-65 | Mathematics (Engr. Calculus 24) | |
| 2092 | Intr. to Math Analysis | |
| 6175 | Intr. to Engr. 22 - Computer | |
| 3032 | Physics 12 or equiv. | |
| ----- | Humanities or Social Science Elective | 1 |

PHYSICS OPTION**SEMESTER 1**

| No. | Course Title | Credit |
|---------|--------------------------------------|--------|
| 2350-53 | Mathematics (Engr. Calculus 21) | |
| 3005 | General Chemistry 21 | |
| 1004 | English Comp. 1 | |
| ----- | Social Science Elective | |
| ----- | Foreign Language/Humanities Elective | 1 |

SEMESTER 2

| No. | Course Title | Credit |
|---------|--------------------------------------|--------|
| 2354-57 | Mathematics (Engr. Calculus 22) | |
| 3006 | General Chemistry 21 | |
| 3015 | Physics 21 | |
| 1005 | English Comp. 2 | |
| ----- | Foreign Language/Humanities Elective | 1 |

SEMESTER 3

| No. | Course Title | Credit |
|---------|---------------------------------|--------|
| 2358-61 | Mathematics (Engr. Calculus 23) | |
| 3016 | Physics 22 | |
| 6219 | Systems Analysis 1 | |
| ----- | Social Science Elective | |
| ----- | Technical Elective | 1 |

SEMESTER 4

| No. | Course Title | Credit |
|---------|---------------------------------|--------|
| 2362-65 | Mathematics (Engr. Calculus 24) | |
| 3017 | Physics 23 | |
| 6224 | Measurements and Analysis | |
| ----- | Technical Elective | |
| ----- | Elective | 1 |

PRE-MEDICAL/PRE-DENTAL/PRE-VETERINARY OPTION**SEMESTER 1**

| No. | Course Title | Credit |
|---------|---------------------------------|--------|
| 2350-53 | Mathematics (Engr. Calculus 21) | |
| 3005 | General Chemistry 21 | |
| 3080 | Biology 1 | |
| 1004 | English Comp. 1 | |
| 4008 | Intro. to Sociology | 1 |

SEMESTER 2

| No. | Course Title | Credit |
|---------|---------------------------------|--------|
| 2354-57 | Mathematics (Engr. Calculus 22) | |
| 3006 | General Chemistry 22 | |
| 3081 | Biology 2 | |
| 3015 | Physics 21 | |
| 1005 | English Comp. 2 | |
| ----- | English Comp. 2 | 1 |

SEMESTER 3

| No. | Course Title | Credits |
|-------|--------------------|---------|
| 3016 | Physics 22 | 5 |
| 3125 | Organic Chemistry | 4 |
| 4086 | General Psychology | 3 |
| ----- | Biology Elective | 4 |
| ----- | General Elective | 3 |
| | | 19 |

SEMESTER 4

| No. | Course Title | Credits |
|-------|-------------------------|---------|
| 3126 | Organic Chemistry | 4 |
| ----- | Biology Elective | 4 |
| ----- | Humanities Elective | 3 |
| ----- | Social Science Elective | 3 |
| ----- | General Elective | 3 |
| | | 17 |

ENGINEERING TECHNOLOGY CORE

The Engineering Technology Core Program is a general technology program. It is for students who do not want to major in any specific technology but want a broad technical background. If after spending one year in the Core Technology Program, a student becomes interested in a specific technology, it is possible for him to transfer to that technology. A student who completes the entire Engineering Technology Core Program is awarded the Associate in Science Degree in Engineering Technology.

SEMESTER 1

| No. | Course Title | Class | Lab | Credits |
|------|------------------------------------|-------|-----|---------|
| 2334 | Mathematics 2331, 32, 33 | 3 | | 3 |
| 3002 | Sliderule Math | 3 | | 1 |
| 6241 | Chemistry 1 | 3 | 3 | 4 |
| 6230 | Prog. Engineering Graphics Mod. 1 | | 3 | 1 |
| 6019 | Survey of Engineering Technologies | 3 | | 3 |
| | Basic Electronics 1 | 3 | | 3 |
| | | 15 | 6 | 15 |

SEMESTER 2

| No. | Course Title | Class | Lab | Credits |
|------|-----------------------------------|-------|-----|---------|
| 3012 | Elective (Humanities) | 3 | | 3 |
| 6024 | Mathematics 2341, 42, 43, 44 | 3 | | 4 |
| 6245 | Physics 1 | | 6 | 4 |
| 6251 | Basic Electronics 2 | 3 | | 3 |
| 6252 | Prog. Engineering Graphics Mod. 5 | | 3 | 1 |
| | Machine Shop Tech. Mod. 1 | | 6 | 1 |
| | Machine Shop Tech. Mod. 2 | | 6 | 1 |
| | | 9 | 21 | 17 |

SEMESTER 3

| No. | Course Title | Class | Lab | Credits |
|------|------------------------------|-------|-----|---------|
| 3013 | Elective (Humanities) | 3 | | 3 |
| 2015 | Elective (Social Science) | 3 | | 3 |
| 6150 | Physics 2 | 3 | 3 | 4 |
| | Statistics & Quality Control | 3 | | 3 |
| | Fluid Power | 3 | | 3 |
| | | 15 | 3 | 16 |

SEMESTER 4

| No. | Course Title | Class | Lab | Credits |
|------|-------------------------------------|-------|-----|---------|
| 6232 | Fortran for Scientists & Engineers | 3 | 3 | 4 |
| 6224 | Engineering Measurements & Analysis | 2 | | 3 |
| | Elective (Social Science) | 3 | | 3 |
| | Electives (Technical) | 5 | 5 | 6 |
| | | 13 | 10 | 16 |



GENERAL STUDIES

The General Studies program offers great flexibility to students who desire to pursue the Liberal Arts/General Studies degree or for students who are initially undecided about career objectives and, therefore, elect General Studies as an exploratory period which leads either to a transfer program or to an occupational curriculum. Students enrolled in this program have an opportunity to remove any academic inadequacies in order that prerequisites needed to either enter one of the occupational programs of the College can be met or transferring to four-year institutions can be more easily effected.

STCC's career programs require a solid foundation in the area of mathematics, English and science. The General Studies program provides services to assist students in acquiring this solid foundation. Students engaged in correcting academic deficiencies receive close, personal supervision from a Faculty Advisor.

The General Studies program is also designed to provide Spanish-speaking students for whom English is not their native language, developmental courses in English as a second language and a series of academic courses in their native language (Spanish) geared towards meeting certain prerequisites needed to complete the core General Studies degree requirements or needed to enter one of the career programs at the College.

The General Studies program involves the student in a broad range of subjects from three academic areas: Social Sciences, Humanities, Mathematics and Natural Sciences. The student is also encouraged to explore career programs through electives in the Divisions of Business, Engineering Technologies and Health and Human Services.

While the curriculum is designed to allow flexibility in the selection of courses, the following are required for graduation with an Associate in Arts degree in Liberal Arts/General Studies:

Minimum requirements for the degree:

9 credits of English/Communications

(English Composition 1 required, 3 credits; plus two additional college-level English courses)

9 credits of Behavioral/Social Sciences

(Intro. to Sociology, 3 credits; General Psychology, 3 credits, required; plus one additional course in History, Economics or Political Science)

9 credits of Mathematics/Sciences

(Minimum of 3 credits in math and 3 in sciences - total of 9 required)

9 credits of Humanities/Fine Arts

The remaining electives (24 credits) must be selected from non-developmental, college-level courses in the humanities, technologies, business, health sciences, mathematics and natural sciences or social sciences.

SEMESTER 1

| No. | Course Title | Credits |
|------|--|---------|
| 1004 | English Composition 1 | 3 |
| | Social Science (History, Economics or Political Science) | 3 |

| | | |
|------|--|-------------------|
| 4008 | Science or Math Sociology English Elective | 3 3 3 15 |
|------|--|-------------------|

SEMESTER 2

| No. | Course Title | Credits |
|------|--|---------|
| 4086 | English Elective | 3 |
| | Science or Math | 3 |
| | General Psychology | 3 |
| | Humanities (Art, Drama, Lang., Adv. Speech, Philosophy, Music) | 3 |
| | Elective | 3 |
| | | 15 |

SEMESTER 3

| No. | Course Title | Credits |
|-----|---------------------|---------|
| | Science or Math | 3 |
| | Humanities Elective | 3 |
| | Elective | 3 |
| | Elective | 3 |
| | Elective | 3 |
| | | 15 |

SEMESTER 4

| No. | Course Title | Credits |
|-----|---------------------|---------|
| | Humanities Elective | 3 |
| | Elective | 3 |
| | Elective | 3 |
| | Elective | 3 |
| | | 15 |

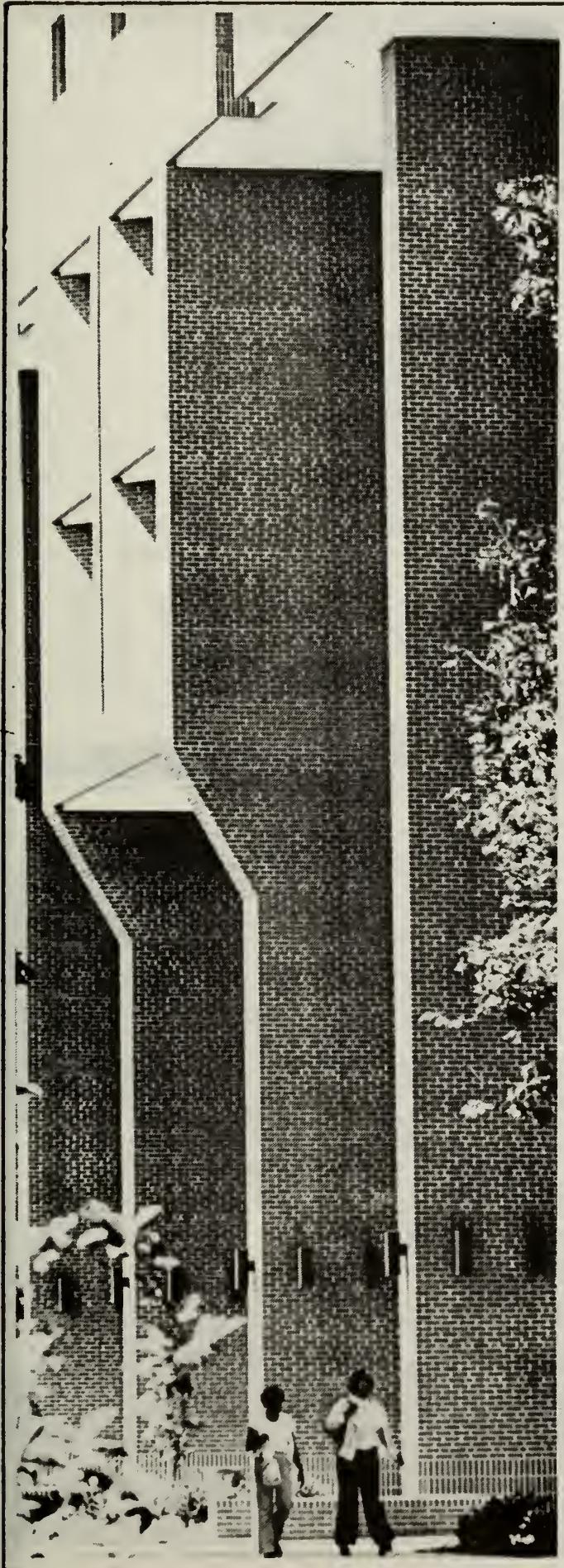
For students in need of developmental studies, the following courses are available:

SEMESTER 1

| No. | Course Title | Credits |
|--------|---|---------|
| 1050 | Efficient Reading Rates | 1 |
| 1051 | Reading Comprehension | 1 |
| 1052 | Vocabulary Development | 1 |
| | or | |
| 1100 | Communication Skills 1 | 3 |
| 1131 | English as a Second Language 1 | 3 |
| 1132 | English as a Second Language 2 | 3 |
| 2301-3 | Mathematics (Basic Arithmetic) or higher if qualified | 3 |
| 3033 | Basic Science 1 | 4 |
| 4128 | Career Planning and Development | 3 |

SEMESTER 2

| No. | Course Title | Credits |
|---------|---|---------|
| 1100 | ESL Communication Skills | 3 |
| 1100 | Communication Skills 1 | 3 |
| | or | |
| 1004 | English Composition 1 | 3 |
| 2021-23 | Mathematics | 3 |
| 2311-13 | Mathematics (Elementary Algebra) or higher if qualified | 3 |
| 3034 | Basic Science 2 | 4 |
| | or | |
| 3099 | Basic Science 3 | 4 |
| | Elective | 3 |



LIBERAL ARTS TRANSFER

The Liberal Arts Transfer curriculum is designed to parallel the first two years of a four-year institution's liberal arts program. It is for students who intend to transfer to a senior college and work toward a Bachelor's degree. The minimum requirements for the Associate in Arts Degree are 62 semester hours (20 courses), including six credits of English composition, 15 credits in the humanities, 15 credits in the Social Sciences, and 14 credits in Mathematics and Natural Sciences.

Foreign Language: Most Bachelor of Arts programs have the following requirements: two years of a college-level foreign language, or four years of a high-school-level foreign language, or three years of high-school level in one language and two years in another language. If a student is going to attend a college which does not require a foreign language (check college catalog(s) carefully), or if he has already met the requirements during high school, there are core elective substitutes for the language listed below.

Literature: Since colleges vary as to type and sequence in this requirement, each student should check the catalog(s) of his choice.

Science: Students elect two lab science courses. Prospective biology, chemistry, mathematics, pre-medical, and pre-dental majors should enter our Engineering Science Transfer program.

SEMESTER 1

| No. | Course Title | Class | Lab | Credits |
|------|---|-------|-----|---------|
| 1004 | English Composition 1 | 3 | | 3 |
| | History: West. Civ. 1 or U.S. Hist. 1 | 3 | | 3 |
| | Foreign language: Elem. Spanish 1, French 1, or German 1 | 3 | | 3 |
| 4086 | Math: 2080, 2332, 2076 or lab science | 3 | | 3 |
| | Gen. Psychology or Intro. to Sociology | 3 | | 3 |
| | | 15 | | 15 |

SEMESTER 2

| No. | Course Title | Class | Lab | Credits |
|------|---|-------|-----|---------|
| 1005 | English Composition 2 | 3 | | 3 |
| | History: West. Civ. 2 or U.S. History 2 | 3 | | 3 |
| | Foreign language: Elem. Span. 2, French 2, or German 2 | 3 | | 3 |
| 4008 | Math: 2081, 2341, 2077, 2016 or lab science | 3 | | 3 |
| | Intro. Sociology or Gen. Psychology | 3 | | 3 |
| | | 15 | | 15 |

SEMESTER 3

| No. | Course Title | Class | Lab | Credits |
|------|---|-------|-----|---------|
| | Literature elective: English Lit., Am. Lit., World Lit., or other lit. | 3 | | 3 |
| | Laboratory science | 3 | 3 | 4 |
| | Foreign language: Inter. Span. 1, French 1, or German 1 | 3 | | 3 |
| 1007 | Speech | 3 | | 3 |
| 4014 | Principles of Economics, 4083 Am. Govt. and Pol., or math or science elective | 3 | 3 | 3 |
| | | 15 | 3 | 16 |

SEMESTER 4

| No. | Course Title | Class | Lab | Credits |
|------|---|-------|-----|---------|
| | Literature elective: Eng. Lit., Am. Lit., World Lit., or other lit. elective | 3 | | 3 |
| | Laboratory science | 3 | 3 | 4 |
| | Foreign language: Inter. Span. 2, French 2 or German 2 | 3 | | 3 |
| 4083 | Amer. Govt. and Politics or Prin. of Economics | 3 | | 3 |
| | Humanities, math, science, or social science elective | 3 | | 3 |
| | | 15 | 3 | 16 |
| | Total Credits | | | 62 |



**business administration
data processing
secretarial sciences**



BUSINESS ADMINISTRATION

DEPT. 50

The Business Administration Department offers a variety of programs to satisfy the needs of their students, whether it be the desire to transfer to a four-year college or university to complete the Baccalaureate Degree or enter the field of business directly from STCC. The main objective of the Department is to enable the student to develop those skills and proficiencies that are essential to the competent performance of professional work either in the classroom or on the job.

There is a comprehensive range of elective courses available in each of the three program offerings. These electives allow the student and faculty advisor to structure a program consistent with specific interests and goals.

The following illustrates the three options at STCC:

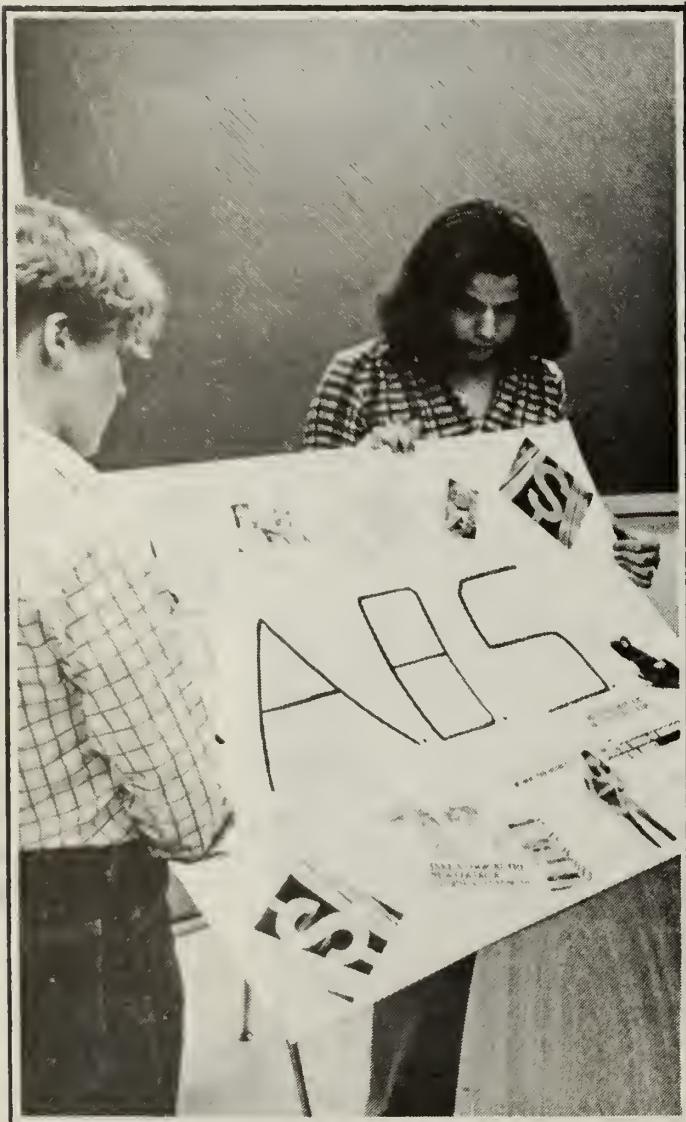
Option 1: BUSINESS ADMINISTRATION - Associate in Science Degree

- General Business
- Accounting
- Finance
- Management
- Marketing

Option 2: Associate in Arts/General Studies (Emphasis in Business Administration)

Option 3*: BUSINESS ADMINISTRATION - Certificate Programs (1 year)

- Small Business Management
- Administrative Bookkeeper



*Subject to approval of the MBRCC.

All candidates for Associate Degrees in the Business Administration Department must complete a total of 62 or 63 credit hours of general and business courses. A minimum grade point average of 2.0 is required in both general and specialized areas.

Special or highly technical courses provided by employers may qualify for academic credit. In some cases, work experience may also be recognized for course credit, e.g. Co-op, Challenge and CLEP exams covering a number of career and general courses are available at STCC and other colleges.

It is essential that prior to your entering the Business Administration Department you carefully chart your program over the next several years. The following steps are recommended:

1. Study the College catalog.
2. Contact a Business Administration Department counselor at 781-6470 (781-1314 evenings).
3. Contact the four-year college to which you might transfer if that is your objective.
4. Structure your program with the assistance of a faculty advisor from STCC's Business Administration Department.

The Department of Business Administration provides a common curriculum in the Freshman year for all Associate Degree programs, exposing students to a variety of introductory business courses before they choose a degree and a major.

Freshman Year (Common Requirements for all programs)

SEMESTER 1

| No. | Course Title | Class | Lab | Credits |
|------|--------------------------|-------|-----|---------|
| 1004 | English Composition 1 | 3 | | 3 |
| (1) | Math Elective | 3 | | 3 |
| 5023 | Accounting 1 | 5 | | 4 |
| 5050 | Principles of Management | 3 | | 3 |
| 6001 | Computer Concepts | 4 | | 4 |
| | | 18 | | 17 |

SEMESTER 2

| No. | Course Title | Class | Lab | Credits |
|------|------------------------------|-------|-----|---------|
| (2) | English Elective | 3 | | 3 |
| (3) | Math or Statistics Elective | 3 | | 3 |
| 5024 | Accounting 2 | 5 | | 4 |
| (4) | Social Science Elective | 3 | | 3 |
| (5) | Business Department Elective | 3 | | 3 |
| | | 17 | | 16 |

Notes:

1. Any math course other than 2301 Basic Math or 2311 Algebra 1 (transfer students should take 2080 Finite Math 1).
2. Limited to 1005 English Composition 2
 - 1006 Business English
 - 1007 Speech
 - 1008 Technical Report Writing(transfer students should take 1005 English Composition 2)
3. Any level of Math beyond 2321 Algebra 2, or 2016 Math Statistics or 5060 Business Statistics (transfer students should take either 2081 Finite 2 or 2016 Math Statistics).
4. Limited to 4008 Sociology or 4086 Psychology
5. Limited to 5059 Principles of Marketing
 - 5088 Principles of Insurance
 - 5090 Principles of Real Estate
 - 5217 Principles of Banking(transfer students should take 5059 Principles of Marketing).

Option 1: BUSINESS ADMINISTRATION - Associate in Science Degree

The Department of Business Administration offers the following Associate in Science Degree majors to students:

- General Business
- Accounting
- Finance
- Management
- Marketing

The Associate in Science is a program with a minimum of 21 credit hours in general studies and the remaining 42 credits in business and general course electives. This is designed as a career program and/or a transfer program for many four-year colleges.

This degree should be considered if you are:

1. Interested in a business career and plan to seek a job after graduation.
2. Desire a specialized degree in one of the five listed majors.
3. Plan to transfer to a four-year institution which will accept the credits.

The following illustrates the course sequence for the Associate Degree options available for the second year of study.

General Business

The General Business Program allows those students desiring an Associate in Science degree maximum flexibility in choosing Business Department electives covering the Accounting, Finance, Management and Marketing areas. The student receives a general overview and broad background in business subjects. This option may be preferred by those unable to decide on a major after completing the freshman core business program (described previously) and/or contemplating transfer to a four-year college which will accept the credits.

Senior Year Courses

SEMESTER 3

| No. | Course Title | Class | Lab | Credits |
|------|-------------------------|-------|-----|---------|
| 4014 | Economics 1 | 3 | | 3 |
| 5048 | Business Law 1 | 3 | | 3 |
| | Business Dept. Elective | 3 | | 3 |
| | Business Dept. Elective | 3 | | 3 |
| | General Elective | 3 | | 3 |
| | | 15 | | 15 |

SEMESTER 4

| No. | Course Title | Class | Lab | Credits |
|------|-------------------------|-------|-----|---------|
| 4015 | Economics 2 | 3 | | 3 |
| (1) | Law Elective | 3 | | 3 |
| | Business Dept. Elective | 3 | | 3 |
| | Business Dept. Elective | 3 | | 3 |
| | General Elective | 3 | | 3 |
| | | 15 | | 15 |

(1) Limited to 5049, 5203, 5208, 5210 (transfer students should take 5049).

Accounting

The demand for trained accountants has increased substantially with the growth and complexity of business and government. Students of accounting therefore must follow a program of training which prepares them to handle the financial accounts of private and public organizations. The modern accountant must have an appreciation of all aspects of business organizations as well as technical proficiency in the

following accounting matters: maintaining accurate accounting records; preparing and analyzing various reports, such as financial, funds and cash flow; payroll and payroll tax procedures; and tax law. Manpower projections have typically shown that accountants are among those who are in high demand and well paid.

Senior Year Courses

SEMESTER 3

| No. | Course Title | Class | Lab | Credits |
|------|---------------------|-------|-----|---------|
| 4014 | Economics 1 | 3 | | 3 |
| 5048 | Business Law 1 | 3 | | 3 |
| | Accounting Elective | 3 | | 3 |
| | Accounting Elective | 3 | | 3 |
| | General Elective | 3 | | 3 |
| | | 15 | | 15 |

SEMESTER 4

| No. | Course Title | Class | Lab | Credits |
|------|-------------------------|-------|-----|---------|
| 4015 | Economics 2 | 3 | | 3 |
| 5049 | Business Law 2 | 3 | | 3 |
| | Accounting Elective | 3 | | 3 |
| | Business Dept. Elective | 3 | | 3 |
| | General Elective | 3 | | 3 |
| | | 15 | | 15 |

Finance

A study of the field of finance exposes the student to the sources and uses of money. Such a curriculum includes courses in the raising of new capital, the efficient use of available funds, investing, money and banking, the Federal Reserve System and other basic studies related to the monetary system. Emphasis is given to analysis of financial statements as well as fiscal planning and management.

Senior Year Courses

SEMESTER 3

| No. | Course Title | Class | Lab | Credits |
|------|------------------|-------|-----|---------|
| 4014 | Economics 1 | 3 | | 3 |
| 5048 | Business Law 1 | 3 | | 3 |
| | Finance Elective | 3 | | 3 |
| | Finance Elective | 3 | | 3 |
| | General Elective | 3 | | 3 |
| | | 15 | | 15 |

SEMESTER 4

| No. | Course Title | Class | Lab | Credits |
|------|-------------------------|-------|-----|---------|
| 4015 | Economics 2 | 3 | | 3 |
| 5049 | Business Law 2 | 3 | | 3 |
| | Finance Elective | 3 | | 3 |
| | Business Dept. Elective | 3 | | 3 |
| | General Elective | 3 | | 3 |
| | | 15 | | 15 |

Management

The world of business continues its growth and the demand for well-trained management students has never been higher. STCC, in its Management Program, prepares the students to assume a wide range of responsible positions in the management area. Specialized elective course areas include Industrial Management, Real Estate Management, Insurance Management, Small Business Management, Travel and Tourist Management. However, one can choose not to specialize and pursue a more general sequence of management electives.

Senior Year Courses

SEMESTER 3

| No. | Course Title | Class | Lab | Credits |
|------|---------------------|-------|-----|---------|
| 4014 | Economics 1 | 3 | | 3 |
| 5048 | Business Law 1 | 3 | | 3 |
| | Management Elective | 3 | | 3 |
| | Management Elective | 3 | | 3 |
| | General Elective | 3 | | 3 |
| | | 15 | | 15 |

SEMESTER 4

| No. | Course Title | Class | Lab | Credits |
|------|-------------------------|-------|-----|---------|
| 4015 | Economics 2 | 3 | | 3 |
| (1) | Law Elective | 3 | | 3 |
| | Management Elective | 3 | | 3 |
| | Business Dept. Elective | 3 | | 3 |
| | General Elective | 3 | | 3 |
| | | 15 | | 15 |

(1) Limited to 5049, 5203, 5208, 5210 (transfer students should take 5049).

Marketing

In recent years, marketing has become an increasingly important activity within our society and, in particular, in New England where there is a growing emphasis on the providing of services. Marketing is a broad field which includes defining and creating a market or a product, gauging and meeting customer wants and needs, advertising, sales, retailing, fashion and merchandising and related areas. Essentially, the study of marketing relates to the performance of business activities that direct the flow of goods and services from producers to consumers.

Senior Year Courses**SEMESTER 3**

| No. | Course Title | Class | Lab | Credits |
|------|--------------------|-------|-----|---------|
| 4014 | Economics 1 | 3 | | 3 |
| 5048 | Business Law 1 | 3 | | 3 |
| | Marketing Elective | 3 | | 3 |
| | Marketing Elective | 3 | | 3 |
| | General Elective | 3 | | 3 |
| | | 15 | | 15 |

SEMESTER 4

| No. | Course Title | Class | Lab | Credits |
|------|-------------------------|-------|-----|---------|
| 4015 | Economics 2 | 3 | | 3 |
| 5049 | Business Law 2 | 3 | | 3 |
| | Marketing Elective | 3 | | 3 |
| | Business Dept. Elective | 3 | | 3 |
| | General Elective | 3 | | 3 |
| | | 15 | | 15 |

**Option 2: ASSOCIATE IN ARTS/GENERAL STUDIES
(Emphasis in Business Administration)**

The Associate in Arts option is designed for those business students planning on transferring to the University of Massachusetts. However, there may be other four-year colleges and universities that will recognize this program for transfer. It requires a minimum of 36 credit hours in general studies. The remaining 27 credits are in business and general electives. This program allows a great deal of flexibility in course selection. Thus, students should consider this degree if they:

1. Are seeking a greater choice of electives and a broader mix of liberal arts studies than is permitted in the other Business Administration options.
2. Desire to transfer to a specific four-year institution, such as the University of Massachusetts, which requires its incoming juniors to have a more general academic background.

Senior Year Courses**SEMESTER 3**

| No. | Course Title | Class | Lab | Credits |
|------|---------------------|-------|-----|---------|
| 4014 | Economics 1 | 3 | | 3 |
| | Literature Elective | 3 | | 3 |
| (1) | Humanities Elective | 3 | | 3 |
| (2) | Elective | 3 | | 3 |
| (2) | Elective | 3 | | 3 |
| | | 15 | | 15 |

SEMESTER 4

| No. | Course Title | Class | Lab | Credits |
|------|-------------------------|-------|-----|---------|
| 4015 | Economics 2 | 3 | | 3 |
| | Social Science Elective | 3 | | 3 |
| | Humanities Elective | 3 | | 3 |
| (2) | Elective | 3 | | 3 |
| (2) | Elective | 3 | | 3 |
| | | 15 | | 15 |

Note: Students planning to transfer to the University of Massachusetts should take:

1. 1007 Speech
2. Electives

5222 Managerial Accounting
5048 Business Law 1
3 credit hours of statistics - 2016 or science
3 credit hours open to a general elective.



Option 3: BUSINESS ADMINISTRATION CERTIFICATE (1 year program) - Small Business Management and Administrative Bookkeeping*

Two-semester programs leading to a Certificate can be extremely valuable to persons who do not have the time or the inclination to undertake a full two-year program. An additional advantage of this program is that the courses may be transferred to a two-year degree in business administration should the student elect to continue on for an Associate Degree.

With business today calling more and more for trained individuals with specific skills, certificate-level programs are well suited to fill the following needs.

- Small Business Administration: Individuals who are operating or planning to open small firms of their own, will find that the Small Business Administration option is a particularly worthwhile and valuable course of study.
- Administrative Bookkeeping: Manpower studies indicate that the occupation of bookkeeper is in high demand in this region.

Certificate programs should be considered by the following persons:

1. Students who do not have the time to pursue a two-year degree program.
2. Students who wish to acquire skills rapidly in a specialty area, but who wish to leave open the option to acquire an associate degree later.
3. Graduates of a two-year technical program who plan to enter fields requiring basic business skills.

Small Business Management

SEMESTER 1

| No. | Course Title | Class | Lab | Credits |
|------|----------------------------|-------|-----|---------|
| 1004 | English Composition 1 | 3 | | 3 |
| 5229 | Small Bus. Acct. & Control | 5 | | 3 |
| 5205 | Small Business Marketing | 3 | | 3 |
| 5228 | Small Bus. Personnel Mgt. | 3 | | 3 |
| 5208 | Small Business Law | 3 | | 3 |
| | | 17 | | 15 |

SEMESTER 2

| No. | Course Title | Class | Lab | Credits |
|------|-----------------------------------|-------|-----|---------|
| 1007 | Speech | 3 | | 3 |
| 5204 | Small Bus. Pln. Control & Financ. | 5 | | 3 |
| 5232 | Office Management & Control | 3 | | 3 |
| (1) | Business Department Elective | 3 | | 3 |
| 5207 | Small Bus. Mgt. Seminar | 3 | | 3 |
| | | 17 | | 15 |

(1) Suggested Business Department Electives:

- 5064 - Federal Income Taxes
- 5222 - Managerial Accounting
- 5058 - Retailing
- 5068 - Advertising and Promotion
- 5069 - Sales and Sales Management
- 5214 - Merchandising
- 5053 - Labor Relations
- 5054 - Production Management
- 5224 - Purchasing

Administrative Bookkeeping

SEMESTER 1

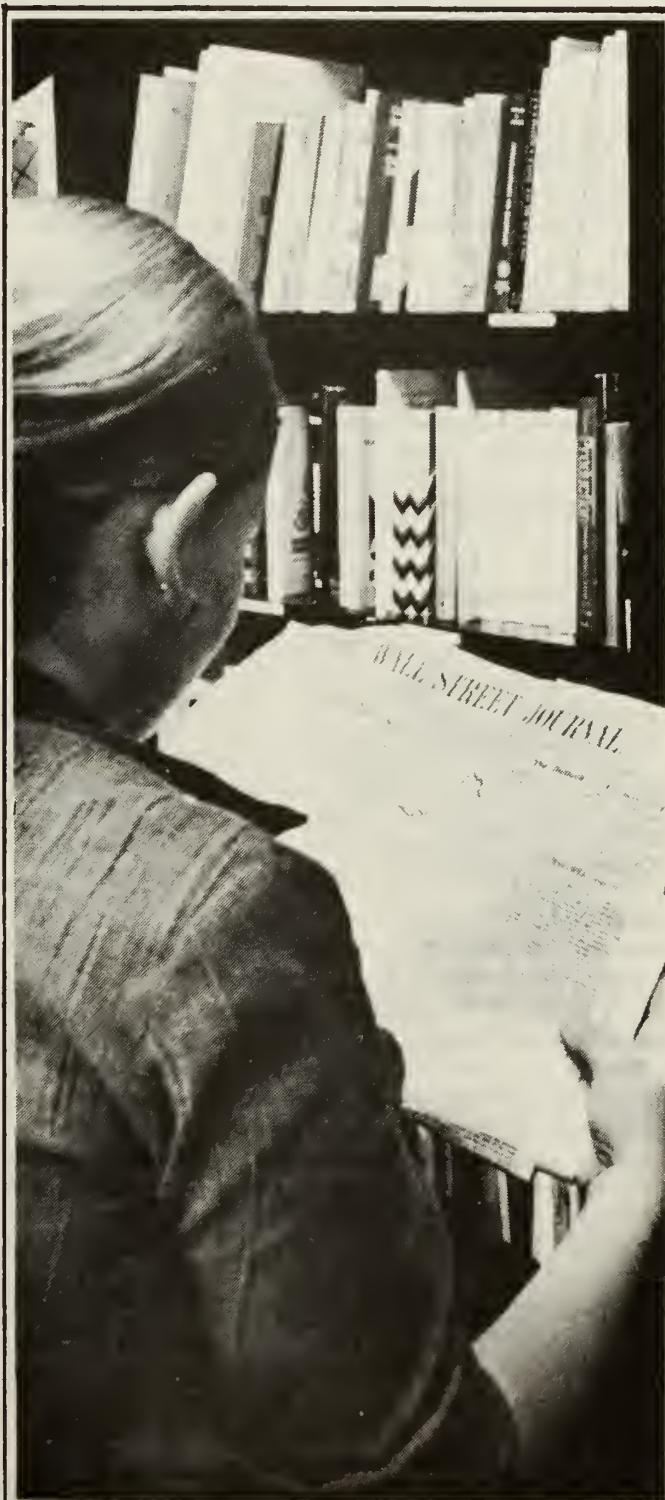
| No. | Course Title | Class | Lab | Credits |
|------|----------------------|-------|-----|---------|
| 5022 | College Accounting 1 | 5 | | 3 |
| 2011 | Business Math | 3 | | 3 |
| 5008 | Typewriting 1 | 3 | | 3 |
| 1006 | Business English | 3 | | 3 |
| 5070 | Consumerism | 3 | | 3 |
| | | 17 | | 15 |

SEMESTER 2

| No. | Course Title | Class | Lab | Credits |
|------|-----------------------------|-------|-----|---------|
| 5038 | College Accounting 2 | 5 | | 3 |
| 5228 | Small Bus. Personnel Mgt. | 3 | | 3 |
| 5009 | Typewriting 2 | 3 | | 3 |
| (1) | Business Dept. Elective | 3 | | 3 |
| 5232 | Office Management & Control | 3 | | 3 |
| | | 17 | | 15 |

(1) Suggested Business Department Electives:

- 5029 - Small Business Management
- 5056 - Personnel Financial Planning
- 5064 - Federal Income Tax
- 5088 - Principles of Insurance
- 5089 - Investments



In order to assist the reader with the course descriptions on the following pages, the list below summarizes the various courses that fall within the specific major areas of concentration:

ACCOUNTING ELECTIVES

- Intermediate Accounting 1
- Intermediate Accounting 2
- Cost Accounting
- Advanced Cost Accounting
- Federal Income Tax 1
- Federal Income Tax 2
- Auditing
- Governmental & Fund Accounting
- Accounting Practicum

FINANCE ELECTIVES

- Credit Management
- Managerial Finance
- Financial Statement Analysis
- Investments
- Money and Banking
- Personnal Financial Planning
- Finance Practicum
- Principles of Banking
- Trust Functions and Services
- Loan Financing and Administration
- Bank Management

MANAGEMENT ELECTIVES

GENERAL

- Production Management
- Personnel Management
- Labor Relations Management
- Small Business Management
- Business Policies
- Collective Bargaining in the Public Sector
- Office Management & Control
- Managerial Accounting
- Management Practicum

INDUSTRIAL

- Supervisory Management
- Production Management
- Production Planning & Control
- Work Methods & Design
- Purchasing
- Principles of Transportation 1
- Principles of Transportation 2

REAL ESTATE

- Principles of Real Estate
- Residential Appraisal
- Commercial & Industrial Appraisal
- Real Estate Investments & Finance
- Real Estate Management
- Real Estate Law

INSURANCE

- Principles of Insurance
- Property Insurance
- Casualty Insurance
- Life, Accident & Health

Group & Social Insurance
Insurance Law

SMALL BUSINESS MANAGEMENT
Small Business Accounting & Control
Small Business Marketing
Small Business Personnel Management
Small Business Planning, Control & Finance
Small Business Seminar
Small Business Law
Small Business Practicum

TRAVEL AND TOURISM MANAGEMENT
Principles & Development of Tourism 1
Principles & Development of Tourism 2
Travel Agency Operation

MARKETING ELECTIVES

- Advertising and Promotion
- Retailing
- Sales and Sales Management
- Consumer Behavior
- Consumerism
- Merchandising
- Materials Design & Analysis
- Fashion Coordination
- Marketing Practicum

ACCOUNTING

5005 - MEDICAL ACCOUNTING

3 credits

An introductory course covering the basic structure, concepts and principles of accounting. Emphasis is placed upon the daily record keeping, classification and summarization of the financial information which flows within a medical office. The accounting cycle including statement presentation is examined along with such areas as cash, receivable, payable, payroll and taxes. (This course is restricted to the Allied Health Student).

5022 - COLLEGE ACCOUNTING 1

3 credits

An introductory course covering the basic structure, concepts and principles of accounting. Emphasis is placed upon the daily record keeping, classification and summarization of the financial information which flows within a business enterprise. The accounting cycle including statement presentation is examined along with such areas as sales, purchases, cash, receivables, payables, payroll and taxes. (This course is restricted to the secretarial, administrative 'bookkeeper or technology student.).

5038 - COLLEGE ACCOUNTING 2

3 credits

The course expands upon the fundamentals learned in College Accounting 1 and examines the role of accounting in the various types of business enterprises. Records maintained on the accrual basis, accounting for long term debts, investments and deferred and payable items are mastered and integrated with the complete accounting cycle. PREREQUISITE: 5022 or equivalent. (This course is restricted to the secretarial or administrative bookkeeper.).

| | | | |
|---|-----------|---|-----------|
| 5023 - ACCOUNTING 1 | 4 credits | 5064 - INTRODUCTION TO FEDERAL INCOME TAXES 1 | 3 credits |
| An introductory course designed to present to the student the nature of accounts and the basic structure, concepts and principles of accounting. Major emphasis is placed upon the recording, classifying and summarizing of the financial data generated within a business enterprise. The various aspects of the accounting cycle are examined; included are the proper journalization of business transactions, the preparation of financial statements and the computation of depreciation and inventory valuation. Various internal control procedures including the voucher system are examined in detail. | | This course presents a comprehensive explanation of the Federal structure and the accepted practice used in applying tax principles in specific problems as they relate to the preparation of returns involving individuals; Massachusetts income taxes as they affect individuals are also reviewed. PREREQUISITE: 5024. | |
| 5024 - ACCOUNTING 2 | 4 credits | 5074 - FEDERAL INCOME TAX 2 | 3 credits |
| Enlarging on the fundamental principles outlined in 5023 Accounting 2 leads the student into the examination of the multiple forms of ownership, i.e., partnerships and corporations. The various aspects of accounting relating to these organizations are analyzed. Statement analysis and funds flow are studied with a view toward managerial decision-making. As part of today's management, information systems, cost accounting and budgeting controls are explored in detail. PREREQUISITE: 5023. | | This course presents a continuation of Introduction to Federal Income Tax 1. It presents a comprehensive explanation of the Federal Income Tax laws as they affect partnerships, corporations, estates, gifts, and trusts. PREREQUISITE: 5064. | |
| 5040 - INTERMEDIATE ACCOUNTING 1 | 3 credits | 5225 - TECHNIQUES OF MANAGEMENT | 3 credits |
| The course is designed to provide the student with a more comprehensive study of the generally accepted accounting principles and attempts to develop within the student the ability to analyze clearly financial statements. The balance sheet, income statement, retained earnings statements, are thoroughly scrutinized. The nature, importance and presentation of the following balance sheet accounts are examined in detail: Cash, Accts. Rec., Inventory Investments. PREREQUISITE : 5024. | | Application of principles and analytical techniques for planning and control are presented within a problem solving context. Topics to be considered include decision theory, waiting line methods, linear programming, net work programs, inventory models, and forecasting. In addition, participation in the management of a firm in a simulated industry is required. Students, organized into management teams, apply their knowledge of various techniques of management and economics in a competitive struggle for profit and market share. PREREQUISITE: 2080. | |
| 5041 - INTERMEDIATE ACCOUNTING 2 | 3 credits | CE5221 - GOVERNMENTAL & FUND ACCOUNTING | 3 credits |
| The course provides a further examination of the nature, importance and presentation of specific balance sheet items. Plant assets, intangible assets, current and long-term liabilities and Stockholder Equity accounts are all covered in detail. The increasing importance of the funds flow statement is discussed and preparatory procedures are examined. Time permitting, some specialized financial analysis techniques are explored. PREREQUISITE: 5040. | | Specialized area of accounting developed in answer to the special needs of non-profit organizations. Covers principles of fund accounting as applied to governmental units and private, non-profit, educational institutions and hospitals. Particular emphasis on accounting for municipal governments. PREREQUISITE: 5040. | |
| 5026 - COST ACCOUNTING | 3 credits | 5222 - MANAGERIAL ACCOUNTING | 3 credits |
| This course provides an overview of the nature and purpose of cost accounting. Within the framework of the course the student is encouraged to develop a conceptual understanding of the interrelationships of cost data, budgets, standards and reports and their logical continuity, beginning with accumulation of cost data, through the necessary procedures and routines and ending with the final reports for management analysis. Topics included: cost concepts and techniques; job order costing; planning and controlling product costs; budget planning and expenditures; flexible budgets; standard costing; process costing; and by-products and joint products costing. PREREQUISITE: 5024. | | An introduction to the internal uses of accounting for management planning and control. The point of view will be on the use rather than the construction of accounting data. Areas of study include the uses of product cost information, volume-profit relationships, variance analysis, budgeting, long-range planning, responsibility accounting and the effect of price level changes. (This course is specifically for business majors other than accounting majors.) PREREQUISITE: 5024. | |
| CE5042 - ADVANCED COST ACCOUNTING | 3 credits | CE5223 - AUDITING | 3 credits |
| A continuation of 5026. Includes the study of process costing, standard costing, gross profit analysis, direct costing and contribution margin, profitability analysis, break-even and cost-volume analysis, differential cost analysis, capital budgeting, product pricing, and linear program. PREREQUISITE: 5026. | | The philosophy of the auditing process, and its applications. Preparation of audit work papers. Auditor's reports, opinions, and significance to various interested parties. Internal auditing procedures. Development of audit programs, generally accepted auditing procedures; review of internal control systems. Particular emphasis on professional ethics and legal responsibilities of the auditor; auditing of EDP systems. PREREQUISITE: 5040. | |
| 5229 - SMALL BUSINESS ACCOUNTING & CONTROL | 3 credits | | |
| | | The accounting concepts and principles presented in this course are designed to meet the needs of the small business manager. The subject is approached from the point of view of the user of accounting information rather than that of the accountant who supplies the information. Methodology and procedures used to collect, summarize, analyze and repeat accounting information is presented from a management perspective. Accounting topics which have proven through time and experience to be vital for the efficient operation of | |

the small business will be covered including accounting for planning and control; inventory and accounts receivable management; preparation and analysis of financial statements; budgets and other internal reports; payroll; federal and state taxes; and break-even analysis.

5204 - SMALL BUSINESS PLANNING, CONTROL & FINANCES 3 credits

This course covers the procedures and techniques of accounting analysis applicable to the managerial functions of credit and collection, cash budgeting control and planning. The student will also be required to evaluate the different methods and costs of obtaining capital, culminating in the formulation of a complete proposal package for a small business of his choice. PREREQUISITES: 5023 or 5229.

Courses will be offered subject to sufficient enrollment.

FINANCE

5044 - MANAGERIAL FINANCE 3 credits

The principle focus of Managerial Finance is on decisions and actions that are undertaken in light of the firm's objectives. Certain key concepts and commonly used tools of financial analysis are developed. Included are such topics as ratio analysis, sources and use of funds analysis and financial control techniques. This material provides a useful overview of finance, and the ideas and terminology developed here facilitates an understanding of all the other parts of the course. Topics to be covered include decisions involving long-term assets, sources and forms of long-term financing, financial structure and leverage and cost of capital calculations. PREREQUISITE: 5024.

5045 - CREDIT MANAGEMENT 3 credits

This course provides an examination and analysis of credit as a business instrument in the contemporary environment. Stress is placed on the functions of the credit analyst and of the credit manager. Included in these are the analysis of credit markets, the study of credit instruments and the determination of credit worthiness. PREREQUISITE: 5024.

5046 - MONEY AND BANKING 3 credits

The nature and functions of money are examined in considerable detail. The role of the commercial banking system as a creator of money and of the central banking system as regulator of the money supply is analyzed. The course includes an extensive study of non-bank financial intermediaries. Open only to seniors.

CE5047 - FINANCIAL STATEMENT ANALYSIS 3 credits

The evaluation of management's performance and the determination of the future condition of the firm is undertaken in this course. Balance sheet and income statement data provide the necessary information to evaluate and analyze the condition of the firm in terms of return on capital invested and use of working capital. The tools and techniques used in this course include ratios, sources and uses of funds analysis, cash flow projection and budgetary planning for current and future business operations. PREREQUISITE: 5024.

5056 - PERSONAL FINANCIAL PLANNING 3 credits

The course is designed to provide the student with an analysis of the various components making up the financial planning.

From this basis, the various products available are examined in depth. These include the various types of insurance including Life, Accident and Health, Property, Liability and Disability Income. Annuities are also included within this section. In addition various investments available are discussed. These include savings, stocks, bonds, mutual funds, tax-sheltered investments and commodities. Interwoven throughout these discussions is the potential impact these investments have on an individual's federal income tax. The last major areas to be investigated are those of estate analysis and retirement planning. Alternative ways to handling these areas are presented and discussed.

5089 - INVESTMENTS 3 credits

This is a beginning course in investment management with special emphasis on the principles governing individual and institutional investment programs. Topics covered include the mechanics of investment, investment media, securities analysis and portfolio management. Open to seniors only.

CE5217 - PRINCIPLES OF BANKING 3 credits

This course was designed to acquaint the student with the basic principles underlying the major objectives of banking operation, the social and economic responsibilities of the bank in the community, the several relationships between a bank and its depositors and an examination of the expanding range of banking services.

CE5218 - TRUST FUNDS AND SERVICES 3 credits

This course introduces students to the organizational structure of a trust department and its wide variety of services. Personal trust, insurance trust, corporate and employee trust and community and institutional trust are examined. The course inquires into the administration of these various trusts and analyzes the legal aspects and problems of property rates, wills and the settlement of estates. The historical background of trust and institutions is treated. PREREQUISITE: 5217.

CE5219 - LOAN FINANCING & ADMINISTRATION 3 credits

An investigation of the sources, costs and availability of funds for business and personal uses. The study stresses an analysis of short-term and long-term loans for business, including accounts receivable financing, consumer installment and mortgage credit. PREREQUISITE: 5217 and 5024.

CE5220 - BANK MANAGEMENT 3 credits

This course analyzes the manner in which bank policy is formulated. It reviews the responsibility of management for organizational planning, personal placement and for control over specific bank activities. The role of management in the deposit function in the employment of bank funds, in loans and investments and the trust operations, is carefully examined. This course is chiefly concerned with the art of management. PREREQUISITE: 5217, 5024.

Courses will be offered subject to sufficient enrollment.

LAW

5031 - MEDICAL LAW & ETHICS 1 credit

The application of law in real world situations encountered by medical personnel. Responsibilities and liabilities of health providers are balanced against the rights and expectations of patients. Traditional ethical questions are explored together with those arising coincident with changing medical practices and public attitudes.

5048 - BUSINESS LAW 1 3 credits

The primary purpose of a course in business law is to develop an understanding of the legal framework of business—the basic principles of law that apply to business transactions. Since the students of the course are not seeking training as lawyers, preventative law becomes an important objective. Emphasis is spent on contracts, agency, employment, personal property and bailments.

5049 - BUSINESS LAW 2 3 credits

The purpose outlined in Business Law 1 is continued with emphasis upon the law of Sales, commercial paper such as promissory notes, drafts and checks, real property arrangements such as Landlord & Tenant, Leases, Wills and Intestacy and Bankruptcy. PREREQUISITE: 5048.

CE5203 - INSURANCE LAW 3 credits

The course is for the purpose of giving students an understanding of insurance and the manner in which the machinery of the law is used and useful for the regulation of business relationships and the enforcement of rights, especially in the business of insurance. Topics studied: insurable interest; making of the contract; premiums; ascertainment and control or risk; waiver and estoppel; construction of Fire, Liability, Life, Accident and Group contracts; and the legal doctrines and remedies common in insurance litigation. Special emphasis on the Law of Torts under which liability for bodily injuries, damage to property and other kinds of injuries resulting from wrongful acts is created. Because of its importance in connection with Public Liability insurance, special stress will be placed on the Law of Negligence. Other forms of torts will be considered and the extent to which they are or can be covered by Liability insurance explained.

5208 - SMALL BUSINESS LAW 3 credits

This course is designed to familiarize the student with his legal rights and responsibilities. Included are law of sales, security devices, real property, customer and employee liabilities, governmental regulation and labor laws, personal and business tax liabilities and business estate planning. Lecture and case analysis will be combined to examine and evaluate the complexities of the subject matter outlined above.

CE5210 - REAL ESTATE LAW 3 credits

This course aims to acquaint the participant with the legal processes and instruments involved in real estate transactions; it does not attempt to supplant the services of the attorney. Included are titles, easements, deeds, contracts, agreements of sale, mortgages, foreclosures and redemptions, liens, wills and probate, tenant and landlord relations, leases and conveyancing. Public aspects of real estate business such as construction and zoning laws, taxes and insurance, are considered.

CE5331 - MEDICAL LAW FOR HEALTH PERSONNEL 3 credits

This course will cover the relationship between The Law and Society as primarily applicable to the practice of medicine. Discussions will cover the sources and type of law, authority and liability of medical and paramedical personnel and their licensure and registration. Medical ethics, confidentiality, insurance and negligence will be considered along with torts, contracts and crimes.

Courses will be offered subject to sufficient enrollment.

MANAGEMENT**5050 - PRINCIPLES OF MANAGEMENT** 3 credits

This course provides the student with an introduction to the science and the art of management. A fundamental premise of the course is that management skills and techniques are transferable among various kinds of organizations (e.g., business, governmental, educational) through which the objectives of a society are pursued. The course provides particular emphasis in the areas of organizational structures and processes, decision-making, planning, leadership, motivation, communication, and control.

5029 - SMALL BUSINESS MANAGEMENT 3 credits

This course is designed to expose the student to the problems of starting, operating and evaluating the effectiveness of the small business. Topics covered include the various forms of organization, financing, cost structure, location, sources of personnel, marketing and competition. PREREQUISITE: 5024, 5050.

5051 - BUSINESS POLICIES 3 credits

This course seeks to develop within the student an understanding of the overall administrative process through an integrating case-study approach. Particular emphasis is given to the role of planning and control in the functional areas of business management - i.e., production, marketing, and finance. PREREQUISITE: 5024, 5050, 5059.

5052 - PERSONNEL MANAGEMENT 3 credits

The primary aim of a course in personnel management is to provide an understanding of the role of the personnel department in the administration of the personnel program and the processes relating to it. The major emphasis is upon the role of departmental supervisors, managers, and their superiors in the management of subordinate personnel according to the objectives and policies of the personnel program of the organization. Areas of study include the basic personnel processes that are involved in the procurement, development and maintenance of these human resources, including those relating to the selection, training, motivation and renumeration of employees and in maintaining relations with their unions. PREREQUISITE: 5050.

5053 - LABOR RELATIONS 3 credits

This course is designed to expose the student to the philosophy, activities and objectives of the American labor movement. Areas of analysis include the history of unionism, the collective bargaining process, labor legislation, and the search for institutional security. Emphasis is placed upon the dynamics of the expanding area of labor management relations. PREREQUISITE: 5050.

5054 - PRODUCTION MANAGEMENT 3 credits

This is a practical course emphasizing the organization and operation of the production system. Included are capital equipment utilization, work measurement and methods analysis, cost, quality and production control, job evaluation and wage incentive systems. Consideration is given to the quantitative aspects of modern management and their value to the executive. PREREQUISITE: 5050.

5232 - OFFICE MANAGEMENT & CONTROL 3 credits

This course exposes the student to the problems of the Office Manager including the major ideas of what has to be done,

how it is going to be done and who is going to do it. In addition, a study of the control procedures on information and personnel is reviewed. PREREQUISITE: 5050.

CE5254 - COLLECTIVE BARGAINING IN THE PUBLIC SECTOR 3 credits

A brief overview of the legal and historical framework of collective bargaining followed by a detailed analysis of the process as it affects public employees. Special emphasis will be directed toward the Massachusetts statute and its application to various employee groups.

5055 - SUPERVISORY MANAGEMENT 3 credits

A study of the skills and techniques needed to perform effectively supervisory work, especially those dealing with people and difficult work situations. More specifically, some of the skills covered are oral and written communication, leadership, grievances, training, rating, promotion, quality and quantity control and labor management relations. Cassettes, records and text will be used to bring actual supervision cases into the classroom for discussion as well as written analysis. PREREQUISITE: 5050.

5057 - PRODUCTION PLANNING & CONTROL 3 credits

Study of management controls as applied to production: The development of the functions of routing, scheduling, activating and monitoring; emphasizing production and material control systems, plant and equipment analysis and budgeting, quality control and inspection, statistical quality control, maintenance analysis and production efficiency. PREREQUISITE: 5054.

CE5076 - WORK METHODS & DESIGN 3 credits

The study of the evolution of identifying, describing and analyzing the problem and the development of motion and time study. Topics covered include motion analysis and work simplification, theory and practice of time study, work performance evaluation and wage incentive and the developing, selecting, installing of new methods. PREREQUISITE: 5054.

CE5224 - PURCHASING 3 credits

This course is designed to introduce the student to the world of modern purchasing. An overview of purchasing management and organization along with policies and procedures is presented. The basic legal aspects of purchasing, purchasing ethics, sources of supply and value analysis are explored and presented for class discussion. Modern methods of purchasing are reviewed using the case method approach. PREREQUISITE: 5050.

CE5230 - PRINCIPLES OF TRANSPORTATION 1 3 credits

A general course in basic transportation principles. An emphasis on the history of transportation up to modern day transportation. Some practical information necessary for the movement of goods. Discussions will include Bills of Lading - Various Freight Terms - Water Transport, Land Transport with special emphasis on Rail and Truck Transportation. PREREQUISITE: 5050.

CE5231 - PRINCIPLES OF TRANSPORTATION 2 3 credits

A course designed to give those interested in a possible Transportation career a working knowledge of Traffic Management and Transportation Sales, Duties & Responsibilities in various fields of Transportation. Discussions will include: Terminal & Special Line-Haul Services -

Transportation Costs - Traffic Management's Role in Decision-Making. PREREQUISITE: 5230.

5090 - PRINCIPLES OF REAL ESTATE 3 credits

This course covers the basic laws and principles of Massachusetts Real Estate. It touches upon legal processes and instruments involved in Real Estate operation, titles, deeds, mortgages, liens, contracts and leases. It gives understanding, background and terminology, necessary for advanced study in specialized courses. This could well assist those preparing for the license examination.

CE5092 - RESIDENTIAL APPRAISAL 3 credits

This course covers the fundamentals of appraising as applied to residential properties. Included are purposes of appraisals, varying concepts of valuation, acquisition of data used for appraisals covering tables, techniques, special factors and final estimates. Writing of reports and preparation of expert testimony for court purposes are given. PREREQUISITE: 5090.

CE5093 - COMMERCIAL & INDUSTRIAL APPRAISAL 3 credits

The principles covered in Residential Appraisal are applied to commercial and industrial properties. An analysis of business neighborhoods covering apartment buildings and hotels as well as all types of industrial and manufacturing properties is made. PREREQUISITE: 5092.

CE5095 - REAL ESTATE INVESTMENTS & FINANCING 3 credits

Various opportunities and inherent problems in the investment in real estate are reviewed. In addition, the fundamentals of financing real estate are covered. Included are instruments of finance, particular applications to leases, bond issues, mortgage lending and income tax effects as a factor. Competing agencies of federal financing organizations and real estate brokers are reviewed. PREREQUISITE: 5089, 5090.

CE5209 - REAL ESTATE MANAGEMENT 3 credits

This course covers the Real Estate operator's functions in exchange and speculation in properties, financing and developing, whether he is running his own business or a department in a brokerage firm. Problems inherent in managing apartments and cooperative apartments are reviewed. PREREQUISITE: 5090.

5088 - PRINCIPLES OF INSURANCE 3 credits

The historical background and developing and understanding of the basic principles of insurance as well as the nature and operation of the insurance business. Emphasis given to the principles which underlie the entire field of insurance. Understanding is developed in the fundamental areas of: Indemnity insurable interest, Co-Insurance, Subrogation, Proximate Cause, Other Insurance, Risk, Requisites of Insurable Risk, Deductibles, Valued Policies, Probability and many others. The important functional areas of rating, underwriting, marketing and adjusting are considered as well as the subjects of Regulation, Reinsurance and Company Organization. The powers and functions of insurance agents and brokers.

CE5085 - PROPERTY INSURANCE 3 credits

Emphasis is placed on understanding coverage, policy provisions, and concepts common to property insurance. Contracts and forms studied include standard fire policy,

extended coverage endorsement, dwelling and contents forms, building and contents forms, crime policy, business interruption forms, daily customer's policy and the property coverage provided by multiple line contracts.
PREREQUISITE: 5088.

CE5098 - CASUALTY INSURANCE 3 credits

Emphasis placed on understanding coverages, policy provisions and concepts peculiar to the common casualty, surety and multiple line contracts. Contracts studied include the Automobile Policy, Workmen's Compensation and Employers Liability Policy, Owner's, Landlords', and Tenants' Liability Policy Comprehensive General Liability Policy, Comprehensive Personal Liability Coverage and the Liability Insurance aspects of modern multiple line contract.
PREREQUISITE: 5088.

CE5200 - LIFE, ACCIDENT & HEALTH INSURANCE 3 credits

A basic course in the background and development of Life Insurance, its economic functions and its principles and practices. Consideration will be given to the history of Life Insurance, types of contracts, the functions of Life Insurance settlement options, special policies, mortality tables, the premium, the reserve surrender values, dividends, selection of risks, substandard insurance, participating and non-participating insurance, home office and agency organization, state supervision and regulation and other general aspects of the subject.
PREREQUISITE: 5088.

CE5202 - GROUP & SOCIAL INSURANCE 3 credits

Analysis of group insurance; including products, marketing, underwriting, re-insurance premiums, and reserves. Also, various governmental and private programs related to the economic problems of death, old age, unemployment and disability.
PREREQUISITE: 5088.

5228 - SMALL BUSINESS PERSONNEL MANAGEMENT 3 credits

The central theme of this course is the personnel responsibility and function of the small business manager. Full attention is devoted to the traditional personnel topics and functions including personnel policies, programs and methodologies; employee selection; training; labor relations; pay administration; employment laws; health and safety; benefits and services. In addition, realistic case problems are presented throughout the course. This will provide the students with an opportunity to apply theory, concepts and principles so that they can adapt their knowledge and skills to particular circumstances.

5206 - SMALL BUSINESS PRACTICUM 3 credits

The student applies knowledge obtained in previous courses to a real business situation. This is done by assigning a small group of students to a new or existing business that is in need of management consultation in the various problematic aspects of the business; including technical assistance in the development of a loan proposal, financial projections and business planning. This course provides the student with the same valuable experience that co-op offers the students in other academic disciplines.
PREREQUISITES: 5204, 5205, 5228, 5229.

CE5207 - SMALL BUSINESS SEMINAR 3 credits

A variety of problems encountered by small businesses are discussed and evaluated in this course. The student must apply

basic business concepts and tools acquired in previous courses to problematic situations presented by way of case studies and small business game simulation. Guest lecturers also will be brought in to discuss management problems and techniques for solving these problems, bringing to the class a different perspective and, it is hoped, a fresh idea.
PREREQUISITES: 5204, 5205, 5228, 5229

CE5211 - PRINCIPLES & DEVELOPMENT OF TOURISM 1 3 credits

Introduces to the student the numerous aspects of tourism as related to recreational facilities, industrial development, historical points of interest, etc. Besides a study of domestic tourism and business travel, international topics such as documentation health certificates, tourist cards, money exchange, will be treated.

CE5212 - PRINCIPLES & DEVELOPMENT OF TOURISM 2 3 credits

An in-depth study of pricing, regulations, regulatory bodies governing travel and transportation. Scheduling and fare computation are discussed.
PREREQUISITE: 5211.

CE5213 - TRAVEL AGENCY OPERATION 3 credits

The primary objective of this course is to analyze the steps required to staff and develop a functional and profitable agency. The student is exposed to a point-by-point analysis of various phases of Travel Agency Development, such as: Location, Interior Layout and Design; Consumer Responsibilities and Office Management Techniques.
PREREQUISITE: 5212.

CE5234 - MANAGEMENT & ORGANIZATION FOR THE MEDICAL OFFICE 3 credits

The primary purpose of this course is to increase the economic efficiency of the medical office. It will focus on the managerial process, specifically on the functions of planning, organizing, staffing, influencing and controlling; and their relation to the daily job of the supervisor. Participating students will become aware of the application of principles of organization and management in the modern medical office.

Courses will be offered subject to sufficient enrollment.

MARKETING

5059 - PRINCIPLES OF MARKETING 3 credits

This course emphasizes a well-rounded basic approach that provides maximum exposure to the role of marketing in the economy and in the firm. To achieve this exposure, an overview is presented of the marketing process and a detailed description of major marketing institutions and functions. The work of marketing is also linked to the whole environment by examining the responsibilities of marketers to our society from the point of view of consumerists and the law. The course will service two types of students—those who want some knowledge of the activities involved in the flow of goods and services from producers to consumers as part of their general education, and those planning a career in marketing.

5058 - RETAILING 3 credits

This course will introduce the student to the field of retailing and will provide the theoretical and technical knowledge necessary for retail employment and middle management. An overview of retailing is presented including such vital areas as

organizational structures, merchandising practices and procedures, promotional activities, store planning and control.
PREREQUISITE: 5059.

5068 - ADVERTISING AND PROMOTION 3 credits

The student is exposed to the field of advertising. Included is the function of advertising and the advertising agency, the design of the copy and the layout and the comparison of the various advertising media. In addition, the advertising promotion, cost, budget and control will be reviewed, utilizing the case study method where feasible.
PREREQUISITE: 5059.

5069 - SALES AND SALES MANAGEMENT 3 credits

This course will introduce the student to the fields of salesmanship and sales management. The salesmanship portion of the course will be presented through programmed learning, presenting the theories, concepts, techniques and processes involved in selling. The sales management section will include the systems, policies, and procedures used to implement business plans. Such functions as planning, organizing, and reporting, controlling and forecasting, will be utilized to analyze the field of marketing management. PREREQUISITE: 5059.

5081 - CONSUMER BEHAVIOR 3 credits

The aim of this course is to understand why people buy as the foundation for developing concepts for meeting consumer needs through selling, advertising, distribution and related activities. Behavioral considerations affecting consumer purchase decisions are analyzed. These include the personality, motivational, cognitive and attitudinal aspects, along with the social influences which affect consumer interaction with business firms. PREREQUISITE: 5059.

5070 - CONSUMERISM 3 credits

The development of an analytical structure within which the underlying issues facing the marketing profession are studied. The pre-purchase, purchase and post-purchase phases of a transaction receive detailed consideration in terms of the legal obligations of the buyer, the seller and the financer. Contemporary consumer concern with advertising, pricing and selling practices is examined along with legal requirements covering product safety, warranties, liability, and consumer recourse. PREREQUISITE: 5059.

5205 - SMALL BUSINESS MARKETING 3 credits

The various aspects of the marketing function are presented in this course. The course will provide a conceptual treatment of the marketing system, markets and managerial issues peculiar to a small business; focusing on purchasing, controlling and displaying merchandise, determining the target market, advertising, promotion pricing, distribution and competition.

5214 - MERCHANDISING 3 credits

A study of the principles and procedures used in selection, promotion and selling of hard and soft good merchandise in retail stores to develop an understanding of the major considerations of buying, inventory control, pricing and consumer buying motives. PREREQUISITES: 5059, 5058.

CE5215 - FASHION COLOR DESIGN & ANALYSIS 3 credits
A study of the nature, source, characteristics, applications and



uses of basic materials. The processes of manufacturing are reviewed. Current concepts of color and design are explored. Field trips are taken as well as sample materials brought into the classroom. PREREQUISITE: 5214.

CE5216 - FASHION COORDINATION 3 credits

Involves the study of the principles, specialized fashion techniques and sources of information utilized by fashion directors and coordinators in wholesale and retail organizations. Workshops projects such as fashion shows, fashion clinics, written and oral fashion reports and forecasts will be assigned. PREREQUISITE: 5215.

Courses will be offered subject to sufficient enrollment.

STATISTICS

2016 - STATISTICS 3 credits

Measures of central tendency and variability; the normal and binomial distributions; hypothesis testing; interval estimations for mean and variance; sampling techniques; correlation. PREREQUISITE: Math 2333 or Finite Math 1 (2080).

5060 - BUSINESS STATISTICS 3 credits

Business statistics is designed to provide a clear, concise discussion of the essential elementary statistical methods used in business and economics today. While the major emphasis is placed on the methods themselves, the theoretical background is explored where necessary for thorough understanding. This course is approached non-mathematically and is designed for the student with a limited math background. The student is encouraged to do field problems and projects during the term. PREREQUISITE: 2321.

Courses will be offered subject to sufficient enrollment.

DATA PROCESSING

DEPT. 30

Data Processing is a program which offers the opportunity to develop an understanding of and an appreciation for the tools of data processing, their operation and applications. In recent years, the use of computers has been extended into almost every area of business, government and science. As a result, the need for people knowledgeable in computer programming systems and operations has multiplied greatly - and is continuing to multiply.

There are no pre-requisites required to enter this program, but the student should be made aware that a good background in mathematics would be very helpful in the learning of various computer languages.

The student is prepared to enter industry as a junior systems analyst, programmer, or operations.

SEMESTER 1

| No. | Course Title | Class | Lab | Credits |
|------|------------------------|-------|-----|---------|
| 2321 | Math (algebra) | 3 | | 3 |
| 5023 | Accounting 1 | 4 | | 4 |
| 5001 | Computer Concepts | 3 | 2 | 4 |
| 5017 | R.P.G. 1 (Comp. Prog.) | 3 | 2 | 4 |
| | | 13 | 4 | 15 |

SEMESTER 2

| No. | Course Title | Class | Lab | Credits |
|------|------------------------|-------|-----|---------|
| 1004 | English Composition 1 | 3 | | 3 |
| 2331 | Math | 3 | | 3 |
| 5024 | Accounting 2 | 4 | | 4 |
| 6270 | R.P.G. 2 (Comp. Prog.) | 3 | 2 | 4 |
| xxxx | Elective (General) | 3 | | 3 |
| | | 16 | 2 | 17 |

SEMESTER 3

| No. | Course Title | Class | Lab | Credits |
|------|--|-------|-----|---------|
| 1005 | English Comp. 2 OR Technical Report Writing | 3 | | 3 |
| 1008 | B.A.L. (Comp. Prog.) | 3 | 2 | 4 |
| 6011 | Cobol 1 (Comp. Prog.) | 3 | 2 | 4 |
| 6012 | D/P Accounting Systems & Proc. | 3 | | 3 |
| 6202 | Elective (Business) | 3 | | 3 |
| xxxx | | 15 | 4 | 17 |

SEMESTER 4

| No. | Course Title | Class | Lab | Credits |
|------|----------------------------|-------|-----|---------|
| 6013 | Cobol 2 (Comp. Prog.) | 3 | 2 | 4 |
| 6015 | Computer Operating System | 3 | | 3 |
| 6269 | Computer Operations | | 2 | 1 |
| 6274 | D/P Advance Systems | 2 | 2 | 3 |
| xxxx | Elective (Business or D/P) | 3 | | 3 |
| | | 11 | 6 | 14 |

Students will take Computer Operations (6269) during either the third or fourth semesters. Total credits required for degree: 63.

6001 - COMPUTER CONCEPTS 4 credits

This course prepares the student to develop an understanding of the role that data processing plays in the business community. To achieve this the student will be taught "Basic" and "Fortran IV" computer programming languages.

Video and hand copy terminals are available for student use. Also a remote card input terminal. An introduction to accounting systems and how they are applied to Computers is briefly covered. PREREQUISITE: None.

6008 - INTRODUCTION TO DATA PROCESSING 4 credits

This course provided the Secretarial Majors and other students with an overall view of Unit Record Equipment, Computer and Data Communication devices. A study is made of the various Input-Output units used in conjunction with computer systems such as disk, tape, card reader and printer.

The student will also spend some time in the writing of computer programs through the use of "BASIC" computer language. This is not a very difficult language and can be mastered in a short period of time. The computer lab is used. PREREQUISITE: None.

6009 - FORTRAN IV

4 credits

Fortran (an acronym for formula translation) is one of the most widely used compiler languages available for use on many modern-day computers. This course is designed to teach the student how to write programs in the Fortran Language so that he may utilize the computer as a tool to solve statistical and mathematical formulae. Students will be given "hands on" experience on the computer so that they can compile and execute the many programs that they will be required to write and test. The course is recommended as an elective to Engineering transfer students and to Data Processing students with a good math background. Elective for Data Processing majors. No prerequisites. Two lab hours and three lecture hours.

6011 - BAL-BASIC ASSEMBLY LANGUAGE

4 credits

Basic Assembly Language as applied to the 360 Series of IBM Computers is the main content of this course. Upon completion, the student will be able to write, assemble and "debug" programs written for this equipment. Extensive use of the IBM 360 Computer in the Data Processing Laboratory will aid the student in bridging the gap between the theoretical and the practical. Required for Data Processing majors. PREREQUISITE: Introduction to Data Processing 6008.

6012 - COBOL 1

4 credits

COBOL (Common Business Oriented Language) was developed under the auspices of the Department of Defense with the cooperation of a number of computer manufacturing companies and major users of computers in the United States. COBOL is a compiler-type language designed to handle business problems. Students will use a medium scale computer to test and "debug" the many business programs that will be written as requirements of this course. Required for Data Processing majors. PREREQUISITE: Introduction to Data Processing, 6008.

6013 - COBOL 2

4 credits

Advanced COBOL coding techniques for tape and disk files are covered. Core-saving techniques and special features such as SORT verb and REPORT WRITER facility are included. Business-oriented applications will be discussed and programmed in detail. Upon completion of this course, the student will be qualified to design and program a typical business problem in COBOL. Required for Data Processing Majors. PREREQUISITE: Introduction to Data Processing, 6008 and Cobol 1, 6012.

6015 - COMPUTER OPERATING SYSTEMS

3 credits

The fundamentals of an operating system is discussed. Functional characteristics of an Advanced Operating System as well as a General-Purpose Time Sharing System are covered. The student is made familiar with a Job Control Language as it relates to creating the desired framework for program execution. PREREQUISITE: B.A.L. 6011, Cobol 1, 6012.

6017 - R.P.G. 1 - REPORT PROGRAM GENERATOR - LEVEL 1

4 credits

Report Program Generator Level Two (R.P.G.) as applied to the computer is the main content of this course. This language is used on all business computers such as: IBM, Univac, Honeywell and Burroughs and NCR. Upon completion, the student will be able to write, assemble, and debug programs. Programs for billing, payroll, inventory control and accounts receivable will be written and tested using the computer in the Data Processing Laboratory. PREREQUISITE: Computer Concepts or Intro to D/P, 6008.

6202 - DATA PROCESSING ACCOUNTING SYSTEMS & PROCEDURES 3 credits

The purpose of this course is to teach the student how to develop systems and procedures and apply them to a Data Processing Installation. The student is schooled in the latest techniques of billing, payroll, warehousing, production and inventory control systems. Required for Data Processing majors. PREREQUISITE: Computer Concepts.

6269 - COMPUTER OPERATIONS 1 credit

Students are given instructions and actual experience in all phases of operating a computer facility. Loading of tape files, tape library maintenance, form changes and alignment on the printer, loading and execution of programs and completion of log entries are stressed. (D/P Majors only and by arrangement).

6270 - R.P.G. 2 - REPORT PROGRAM GENERATOR - LEVEL 2 4 credits

Upon completion, the student will be able to write programs using Tables, Arrays, Subroutines. Also, the student will write programs disk and tape. The student will write various programs for these devices and they will be tested, assembled, and debugged in the Data Processing Laboratories. PREREQUISITE: R.P.G. 1, 6017.

6271 - DATA COMMUNICATIONS

3 credits

The student will be introduced to devices that can be used for the remote transmission of data. Both high-speed and low-speed devices will be covered. At the completion of this course the student will be expected to design a complete telecommunications network for a sample business problem. Several case studies will be discussed during the semester. Three lecture hours. Elective course. Offered as requested. PREREQUISITE: Cobol 1, 6012 & BAL, 6011.

6274 - ADVANCED SYSTEMS

3 credits

This course will give the student experience in the application of systems theory and programming knowledge to the design, implementation and operation of business systems. As projects in the lab portion of the course, the students will catalog programs after they are debugged, load files and execute the programs in their system from the remote terminals in the Data Processing Laboratory. The goals of the course is to have students design systems which operate efficiently. PREREQUISITES: R.P.G. 2, 6270; COBOL 1, 6012; Data Processing Systems and Procedures, 6202.



SECRETARIAL SCIENCES

The aim of the Secretarial Science two-year Associate Degree curricula is to prepare students to assume greater responsibility in a secretarial career than is required in a stenographic career, which depends largely on the basic skills of typewriting and shorthand. The role of the secretary has changed and so has the training she needs in order to do her job successfully. In addition to a high degree of competency in shorthand and typing, the secretary needs a broader knowledge of communications, economics, psychology, sociology, business law, data processing and accounting.

The well-trained executive secretary has a wide range of opportunities open to her in such areas as advertising, all of the arts, finance, education, government, foreign service and many others. The medical secretary is not only competent in secretarial skills, but she must have a wide range of medical knowledge. She is prepared to work in doctors' offices, medical centers and other medical institutions. The legal secretary specializes in legal terminology, business law and accounting. She is fully prepared to assume executive secretarial duties in any type of business organization. Minimum Grade Requirements: Students in Secretarial Science must receive a "C" in all courses for graduation.

BILINGUAL SECRETARIAL

DEPT. 66

SEMESTER 1

| No. | Course Title | Class | Lab | Credits |
|------|---|-------|-----|---------|
| 1100 | Communications Sk. Is 1 | 3 | | 3 |
| 1147 | Spanish for Spanish Speakers 1 | 3 | | 3 |
| 4020 | History and Cult. of Puerto Rico & Hispanic America 1 | 3 | | 3 |
| 5908 | Typing 1 Lab | 3 | 2 | 3 |
| 2011 | Business Math | 3 | | 3 |
| | | 15 | 2 | 15 |

SEMESTER 2

| No. | Course Title | Class | Lab | Credits |
|------|--------------------------------|-------|-----|---------|
| 1004 | English Composition 1 | 3 | | 3 |
| 1148 | Spanish for Spanish Speakers 2 | 3 | | 3 |
| 5909 | Typing 2 Lab | 3 | 2 | 3 |
| 5123 | Clerical Office Practice | 3 | | 3 |
| 5160 | Shorthand 1 - I.P.M. | 3 | | 3 |
| 5039 | Machine Transcription* | 3 | | 3 |
| | *Choose One | 15 | 2 | 15 |

SEMESTER 3

| No. | Course Title | Class | Lab | Credits |
|------|---------------------------|-------|-----|---------|
| 1152 | Translation for Bilingual | 3 | | 3 |
| 5153 | Bilingual Typing | 3 | 2 | 3 |
| 5164 | Shorthand 2* | 3 | | 3 |
| 5022 | College Accounting * | 3 | | 3 |
| 4086 | General Psychology | 3 | | 3 |
| 5017 | Secretarial Practice 2 | 3 | | 3 |
| | *Choose One | 15 | 2 | 15 |

SEMESTER 4

| No. | Course Title | Class | Lab | Credits |
|------|-----------------------------------|-------|-----|---------|
| 5108 | Bilingual Transcription | 3 | 3 | 6 |
| 5111 | Bilingual Business Correspondence | 3 | | 3 |
| 5048 | Business Law 1 | 3 | | 3 |
| | Elective | 3 | | 3 |
| | | 12 | 3 | 15 |

1147 - SPANISH FOR SPANISH SPEAKERS 3 credits

This class will consist of a review of Spanish grammar with the main emphasis on the development and enrichment of writing skills. More specifically the student will be given a brief history of the Spanish language, study parts of the Spanish language, phonetics, spelling, commercial composition and contrastive analysis.

1148 - SPANISH FOR SPANISH SPEAKERS 2 3 credits

Continuation of Spanish for Spanish Speakers 1 (1147).

1152 - TRANSLATION FOR BILINGUAL

3 credits

This course brings together the skills acquired in the two languages (Spanish and English) to make the student an effective bilingual office worker. Students are introduced to translation as it applies to secretarial science.

4020 - HISTORY AND CULTURE OF PUERTO RICO AND HISPANIC AMERICANS 3 credits

This class is designed to provide the student with some insight into his or her ancestry and culture in the context of United States society. Although not all the students are of Puerto Rican descent, it will be up to the individual instructor to incorporate, where possible, into the course historical and cultural data pertaining to other Spanish countries.

5111 - BILINGUAL BUSINESS CORRESPONDENCE

3 credits

The course covers the mechanics of style in both English and Spanish and the precise use of words. The student will write various types of business letters in both English and Spanish and will prepare a letter of application and resume.

5908 - TYPING LAB 1

3 credits

This is a basic course in which correct typewriting techniques, skill, and accuracy are stressed. Timed writings from 3 to 5 minutes are introduced. The student becomes familiar with centering, tabulations, block letter style, simple memorandums, postcards, rough drafts, and manuscripts. The slide-tape presentation of the instruction aid in individual progress, and the student learns to type at his (her) own pace. The minimum speed requirement for the course is 30 words per minute for three minutes with three or less errors.

5909 - TYPING LAB 2

3 credits

This course is a continuation of 5908 with continued development of speed and accuracy together with a thorough mastery of all letter styles, interoffice correspondence, addressing envelopes, rough draft materials, manuscripts, and ruled tabulations. The slide-tape presentation of the instruction aids in individual progress, and the student masters the required skills at his (her) own pace. The minimum requirement for this course is 40 words per minute for five minutes with five or less errors.

5153 - BILINGUAL TYPING

3 credits

The student who has already mastered the English keyboard is now introduced to the Spanish keyboard. The student masters the production of tabulations, memorandums, business letters and envelopes, manuscripts from rough drafts, outlines, and the preparation of standard business forms in both English and Spanish. Minimum speed and accuracy in both languages is 45 w.p.m. on five-minute timings with a maximum of five errors.

5108 - BILINGUAL TRANSCRIPTION

6 credits

This course is designed to develop the student's ability to take English dictation at high rates of speed and transcribe rapidly. The student also learns the technique and operation of machine transcription equipment in the transcription of both English and Spanish correspondence. Emphasis is on mailable transcripts. Grammar, spelling, punctuation, capitalization, and proofreading are stressed.

5016 - SECRETARIAL PRACTICE 1

3 credits

This course gives the student instruction and practice in a variety of secretarial skills including copying and duplicating, processing mail and composing letters, telephone techniques and postal services, filing procedures, handling conferences and preparing itineraries. Through the use of simulated office

situations, the student develops initiative and decision-making abilities essential to top-level secretarial positions. Students are instructed in the preparation of personal data sheets and letters of application. The course meets three hours per week. PREREQUISITE: 5009.

5017 - SECRETARIAL PRACTICE 2 3 credits
 Students learn to operate a variety of office machines, including duplicating equipment, copy machines, electronic calculators (printing and display), adding machines (10-key and full keyboard), transcription equipment, and the IBM Executive typewriter. The course meets three hours per week. PREREQUISITE: 5016 or 5123.

5160 - INDIVIDUAL PROGRESS SHORTHAND 1 4 credits
 In this course emphasis is placed on the mastery of the principles of Gregg Shorthand with particular attention to penmanship, vocabulary, spelling, and punctuation. The mastery of the principles and the building of vocabulary are developed through reading and writing shorthand. Instruction is individualized and the student learns at his (her) own pace through tapes correlated with the text. The minimum requirement for the course is 50 words per minute for two minutes on familiar material with 95 percent accuracy.

5164 - INDIVIDUAL PROGRESS SHORTHAND 2 4 credits
 This course continues with the refinement of the principles of Gregg Shorthand with further emphasis on penmanship, vocabulary, spelling, and punctuation, and on the development of dictation and transcription skills. Instruction is individualized and the student develops the required skills through tapes correlated with the text. The minimum requirement for the course is 70 words per minute for three minutes on new material with 95 percent accuracy.

CLERICAL OFFICE ASSISTANT (1 YEAR) DEPT. 65

SEMESTER 1

| No. | Course Title | Class | Lab | Credits |
|------|----------------------------|-------|-----|---------|
| 1004 | English Composition 1 | 3 | | 3 |
| 2100 | Business Meth | 3 | | 3 |
| 4008 | Sociology or Elective | 3 | | 3 |
| 5008 | Typewriting 1 | 5 | | 3 |
| 5124 | Clerical Office Practice 1 | 3 | | 3 |
| | | 17 | | 15 |

SEMESTER 2

| No. | Course Title | Class | Lab | Credits |
|------|-----------------------------------|-------|-----|---------|
| 1006 | Business English | 3 | | 3 |
| 4009 | Sociology 2 or Business Law | 3 | | 3 |
| 5009 | Typewriting 2 | 5 | | 3 |
| 5039 | Machine Dictation and Transcript. | 3 | | 3 |
| 5017 | Secretarial Practice 2 | 3 | | 3 |
| | | 17 | | 15 |

COURT STENOGRAPHY

DEPT. 59

SEMESTER 1

| No. | Course Title | Class | Lab | Credits |
|------|-----------------------|-------|-----|---------|
| 1004 | English Composition 1 | 3 | | 3 |
| 5008 | Typewriting 1 | 5 | | 3 |
| 5120 | Machine Shorthand 1 | 4 | 4 | 6 |
| 4086 | General Psychology | 3 | | 3 |
| | Elective | 3 | 4 | 3 |
| | | 18 | 4 | 18 |

SEMESTER 2

| No. | Course Title | Class | Lab | Credits |
|------|-------------------------------------|-------|-----|---------|
| 1005 | Composition 2: Intro. to Literature | 3 | | 3 |
| 3130 | Biology of Man | 3 | 3 | 4 |
| 5009 | Typewriting 2 | 5 | | 3 |
| 5121 | Machine Shorthand 2 | 4 | 4 | 6 |
| | | 15 | 7 | 16 |

SEMESTER 3

| No. | Course Title | Class | Lab | Credits |
|------|-----------------------|-------|-----|---------|
| 5048 | Business Law 1 | 3 | | 3 |
| 5010 | Legal Typewriting | 2 | 3 | 3 |
| 5122 | Machine Shorthand 3 | 4 | 4 | 6 |
| 5126 | Legal Office Practice | 3 | | 3 |
| | | 12 | 7 | 15 |

SEMESTER 4

| No. | Course Title | Class | Lab | Credits |
|------|---------------------------------|-------|-----|---------|
| | Elective | 3 | | 3 |
| 1006 | Business English | 3 | | 3 |
| 5036 | Legal Dictation & Transcription | 4 | 4 | 6 |
| 5127 | Court Reporting Technology | 3 | | 3 |
| | | 13 | 4 | 15 |

EXECUTIVE SECRETARIAL

DEPT. 61

SEMESTER 1

| No. | Course Title | Class | Lab | Credits |
|------|----------------------------------|-------|-----|---------|
| 1004 | English Composition 1 | 3 | | 3 |
| 4014 | Economics 1 | 3 | | 3 |
| 5008 | Typewriting 1 or Gen. Psychology | 5 | | 3 |
| 4008 | Introduction to Sociology 1 | 3 | | 3 |
| 5018 | Shorthand 1 or 5062 Skill Build. | 3 | 2 | 4 |
| | | 17 | 2 | 16 |

SEMESTER 2

| No. | Course Title | Class | Lab | Credits |
|------|-------------------------------|-------|-----|---------|
| 1005 | Composition 2: Intro. to Lit. | 3 | | 3 |
| 6008 | Intro. to Data Processing | 3 | | 3 |
| 4086 | General Psychology | 3 | | 3 |
| 5009 | Typewriting 2 | 5 | | 3 |
| 5019 | Shorthand 2 | 3 | 2 | 4 |
| | | 17 | 2 | 16 |

SEMESTER 3

| No. | Course Title | Class | Lab | Credits |
|------|-------------------------|-------|-----|---------|
| 5048 | Business Law 1 | 3 | | 3 |
| 5020 | Shorthand 3 | 3 | 2 | 4 |
| 5022 | College Accounting 1 | 3 | | 3 |
| 5011 | Executive Typewriting 1 | 2 | 3 | 3 |
| 5016 | Secretarial Practice 1 | 3 | | 3 |
| | | 14 | 5 | 16 |

SEMESTER 4

| No. | Course Title | Class | Lab | Credits |
|------|-------------------------------------|-------|-----|---------|
| 1006 | Business English | 3 | | 3 |
| 5017 | Secretarial Practice 2 (Elective) | 3 | | 3 |
| 5021 | Exec/Tech Dictation and Trans. | 4 | 4 | 6 |
| 5049 | Business Law 2 (Elective) | 3 | | 3 |
| 5038 | College Accounting 2 (Elective) | 3 | | 3 |
| 5039 | Machine Transcription (Elective) | 3 | | 3 |
| 5050 | Principles of Management (Elective) | 3 | | 3 |
| | | 23 | | 25 |

LEGAL SECRETARIAL

DEPT. 60

SEMESTER 1

| No. | Course Title | Class | Lab | Credits |
|------|----------------------------------|-------|-----|---------|
| 1004 | English Composition 1 | 3 | | 3 |
| 4014 | Economics 1 | 3 | | 3 |
| 4008 | Introduction to Sociology 1 | 3 | | 3 |
| 5018 | Shorthand 1 or 5062 Skill Build. | 3 | 2 | 4 |
| 5008 | Typewriting 1 or Gen. Psych. | 5 | | 3 |
| | | 17 | 2 | 16 |

SEMESTER 2

| No. | Course Title | Class | Lab | Credits |
|------|-------------------------------------|-------|-----|---------|
| 1005 | Composition 2: Intro. to Literature | 3 | | 3 |
| 6008 | Intro. to Data Processing | 3 | | 3 |
| 4086 | General Psychology | 3 | | 3 |
| 5009 | Typewriting 2 | 5 | | 3 |
| 5019 | Shorthand 2 | 3 | 2 | 4 |
| | | 17 | 2 | 16 |

SEMESTER 3

| No. | Course Title | Class | Lab | Credits |
|------|----------------------|-------|-----|---------|
| 5022 | College Accounting 1 | 3 | | 3 |
| 5048 | Business Law 1 | 3 | | 3 |
| 5010 | Legal Typewriting | 2 | 3 | 3 |
| 5020 | Shorthand 3 | 3 | 2 | 4 |
| 5126 | Legal Office Prac. | 3 | | 3 |
| | | 14 | 5 | 16 |

SEMESTER 4

| No. | Course Title | Class | Lab | Credits |
|------|-----------------------------------|-------|-----|---------|
| 1006 | Business English | 3 | | 3 |
| 5017 | Secretarial Practice 2 (Elective) | 3 | | 3 |
| 5038 | College Accounting 2 (Elective) | 3 | | 3 |
| 5036 | Legal Dictation and Transcription | 4 | 4 | 6 |
| 5049 | Business Law 2 | 3 | | 3 |
| 5039 | Machine Transcription (Elective) | 3 | | 3 |
| 5050 | Principles of Management | 3 | | 3 |
| | | 22 | | 24 |

MEDICAL SECRETARIAL**DEPT. 62****SEMESTER 1**

| No. | Course Title | Class | Lab | Credits |
|------|-------------------------------------|-------|-----|---------|
| 1004 | English Composition 1 | 3 | | 3 |
| 5008 | Typewriting 1 | 5 | | 3 |
| 5018 | Shorthand 1 or Skill Building | 3 | 2 | 4 |
| 3077 | Human Biology 1 | 3 | 2 | 4 |
| 7044 | Med. Asstg. Tech. for Secretaries 1 | 3 | 2 | 4 |
| | | 17 | 6 | 18 |

SEMESTER 2

| No. | Course Title | Class | Lab | Credits |
|------|-------------------------------------|-------|-----|---------|
| 5019 | Shorthand 2 | 3 | 2 | 4 |
| 5009 | Typewriting 2 | 5 | | 3 |
| 7045 | Med. Asstg. Tech. for Secretaries 2 | 3 | 2 | 4 |
| 1005 | Composition 2: Intro. to Literature | 3 | | 3 |
| 3078 | Human Biology 2 | 3 | 2 | 4 |
| | | 17 | 6 | 18 |

SEMESTER 3

| No. | Course Title | Class | Lab | Credits |
|------|---------------------------------|-------|-----|---------|
| 5033 | Medical Secretarial Typewriting | 2 | 3 | 3 |
| 4086 | General Psychology | 3 | | 3 |
| 5013 | Medical Shorthand | 3 | 2 | 4 |
| 5014 | Medical Office Practice 1 | 3 | | 3 |
| 5031 | Medical Law and Ethics | 1 | | 1 |
| | | 12 | 5 | 14 |

SEMESTER 4

| No. | Course Title | Class | Lab | Credits |
|------|----------------------------|-------|-----|---------|
| 1006 | Business English | 3 | | 3 |
| 5005 | Medical Accounting | 3 | | 3 |
| 5015 | Medical Office Practice 2 | 3 | | 3 |
| 5034 | Med. Dict. & Transcription | 4 | 4 | 6 |
| | | 13 | 4 | 15 |

2011 - BUSINESS MATHEMATICS

3 credits

This course seeks to give students an understanding and application of mathematical concepts as they relate to business activities and increased competency in the fundamental mathematical and arithmetic skills. Emphasis is placed upon learning mathematical concepts through practical application in business situations. The explanations of business procedures, terminology and original documents aid in promoting understanding and reasoning. Since skill building is very important, the text materials and assignments provide a balance between business applications and skill development. The course meets three hours per week.

5005 - MEDICAL ACCOUNTING

3 credits

This course gives instruction and practice in the fundamental principles of professional accounting covering daily record keeping; the theory of debits and credits; classification of accounts; journalizing; preparation of financial statements; use of the trial balance; and technical procedures involved in closing the operating accounts of a single proprietorship in professional business. A definite effort is made to correlate the work to that of a medical situation. The course meets three hours per week.

5008 - TYPEWRITING 1

3 credits

A foundation course in which current typewriting techniques, skill and accuracy are stressed. Timed writing for 3 minutes are introduced. The student becomes familiar with centering, manuscripts, tabulations and block letter style. Class drills and

projects aid in individual progress. The minimum speed requirement for the course is 30 words per minute for three minutes with three or less errors for beginners. The course meets five hours per week.

5009 - TYPEWRITING 2

3 credits

This course is a continuation of 5008 or its equivalent with continued development of speed and accuracy together with a thorough mastery of all letter styles, interoffice correspondence, addressing envelopes, rough draft materials and tabulation. The minimum requirement for this course is 45 words per minute for five minutes with five or less errors. The course meets five hours per week. PREREQUISITE: 5008 or equivalent.

5010 - LEGAL TYPEWRITING

3 credits

This course is designed specifically for the legal secretary where stress is placed on building speed and accuracy in the understanding and production of legal documents and correspondence. Typing stamina is built and maintained through the use of timed writings. Legal vocabulary and punctuation are emphasized through project work. The course meets five hours per week. PREREQUISITE: 5009; typing speed of 40 words per minute for 5 minutes.

5011 - EXECUTIVE TYPEWRITING

3 credits

This course is designed for the executive secretary where difficult materials in manuscript, statistical and rough draft typing present a challenge in problem solving for the student. Speed and accuracy are developed through the production of these materials. Typing stamina is further built and maintained through the use of timed writings. The course meets five hours per week. PREREQUISITE: 5009; typing speed of 40 words per minute for 5 minutes.

5012 - MEDICAL TYPEWRITING

3 credits

This course is designed specifically for the medical assistant. Emphasis is placed on the understanding and production of medical forms, insurance forms, case histories, discharge summaries, medical reports, and medical correspondence. Typing stamina is built and maintained through five-minute timed writings using medical material. Minimum typing speed is 40 w.p.m. for five minutes. The course meets five hours per week. PREREQUISITE: 5008 or equivalent.

5013 - MEDICAL SHORTHAND

4 credits

This is a comprehensive medical shorthand skill building course. Emphasis is placed on the mastery of the shorthand outlines for the commonly used medical terms with particular attention to the medical prefixes and suffixes. The student not only masters the shorthand outlines but must also become thoroughly familiar with the spelling and meaning of medical nomenclature. The course meets five hours per week. PREREQUISITE: 5009 and 5012.

5014 - MEDICAL OFFICE PRACTICE 1

3 credits

This course is designed to familiarize the student with the routine business skills pertinent to the medical office. This course includes the development of reception room procedures, telephone techniques, filing and various other medical office assistant duties. The course meets three hours per week. PREREQUISITE: 5009 or 5012.

5015 - MEDICAL OFFICE PRACTICE 2

3 credits

This course is a continuation of Medical Office Practice 1 with an introduction to the operation of a variety of office machines, including electronic calculators, IBM Executive typewriters, transcribing equipment, and duplicating and

copying equipment used in the medical office. Emphasis will be placed on the training of medical secretaries using medical dictation for machine transcription. This course meets three hours per week. PREREQUISITE: 5033 or 5012 or equivalent and 5014.

5016 - SECRETARIAL PRACTICE 1 3 credits

This course gives the student instruction and practice in a variety of secretarial skills including the duties of the receptionist, telephone techniques, filing procedures, handling confidential matters, conferences and itineraries. Through the use of simulated office situations, the student develops initiative and decision-making abilities essential to top-level secretarial positions. The course meets three hours per week. PREREQUISITE: 5009.

5017 - SECRETARIAL PRACTICE 2 3 credits

This course is a continuation of Secretarial Practice 1 with emphasis on the operation of a variety of office machines, including duplicating equipment, copying machines, calculators, IBM Executive typewriters and transcribing equipment. Continued emphasis will be placed on the training of secretaries for top-level positions through the media of field trips, demonstrations and simulations. Students are assisted to obtain employment through the preparation of resumes, letters of application and simulated interviews. The course meets three hours per week. PREREQUISITE: 5016.

5018 - SHORTHAND 1 4 credits

In this course emphasis is placed on the mastery of the principles of College Gregg Shorthand, Diamond Jubilee Series, with particular attention to penmanship, vocabulary, spelling and punctuation. The mastery of the principles and the building of vocabulary are developed through reading and writing shorthand. The minimum requirement for the course is 60 words per minute for two minutes on familiar material with 95 percent accuracy. The course meets five hours per week.

5019 - SHORTHAND 2 4 credits

This course continues with the refinement of the principles of College Gregg Shorthand with further emphasis on penmanship, vocabulary, spelling, and punctuation. Emphasis is placed on the development of speed and accuracy in taking dictation. Expert shortcuts are presented. The minimum requirement for the course is 70 words per minute for three minutes on new material with 95 percent accuracy. The course meets five hours per week. PREREQUISITE: 5018 or 5062, 5008.

5020 - SHORTHAND 3 4 credits

This course stresses the development of speed with continued emphasis on vocabulary, spelling, and shortcuts. Students receive dictation pertinent to the various departments of a large business organization. The minimum requirement for the course is 80 words per minute for five minutes with at least 95 percent accuracy. The course meets five hours per week. PREREQUISITE: 5019, 5009.

5021 - EXECUTIVE DICTATION AND TRANSCRIPTION 6 credits

This course is designed to develop the student's ability to take

dictation at high rates of speed and to transcribe rapidly and accurately. No credit is given unless the transcript is mailable. Shorthand theory, punctuation, spelling, and vocabulary are stressed throughout the course. The course meets eight hours per week. PREREQUISITES: 5020 and 5011.

5031 - MEDICAL LAW & ETHICS 1 credit

The application of law in real world situations encountered by medical personnel. Responsibilities and liabilities of health providers are balanced against the rights and expectations of patients. Traditional ethical questions are explored together with those arising coincident with changing medical practices and public attitudes.

5033 - MEDICAL SECRETARIAL TYPING 3 credits

This course is designed specifically for the medical secretary. This production typing course concentrates on understanding and accuracy in typing medical forms, reports, progress notes, case histories, and correspondence. Typing stamina is built and maintained through five minute timed writing using medical material. This course meets five hours per week. PREREQUISITE: 5009; typing speed of 40 words per minute for 5 minutes.

5034 - MEDICAL DICTATION AND TRANSCRIPTION 6 credits

This course is a continuation of Medical Shorthand with further development of shorthand characters for medical terms, as well as a mastery of the spelling, meaning, and pronunciation. The student develops the ability to take dictation of materials pertinent to the medical field and to transcribe with speed and accuracy. The course meets eight hours per week. PREREQUISITE: 5013, 5033.

5036 - LEGAL DICTATION AND TRANSCRIPTION 6 credits

This course is designed to develop the student's ability to take dictation of legal material at varying rates of speed and to transcribe with speed and accuracy. Development of shorthand characters for legal terminology, as well as mastery of spelling, meaning, pronunciation, and punctuation are stressed throughout the course. Points of law and legal secretarial practice are also emphasized throughout the course. No credit is given unless the transcript is mailable. The course meets eight hours per week. PREREQUISITE: 5020, 5010 or 5122.

5039 - MACHINE DICTATION AND TRANSCRIPTION 3 credits

This course emphasizes the technique and operation of machine transcription equipment. Transcription skills will be acquired through the use of a wide variety of business related dictation. Emphasis is on mailable transcripts. Grammar, spelling, punctuation, capitalization, proofreading, and the use of reference material will be stressed. The relationship of machine transcription to the word processing concept will also be introduced. The course meets three hours a week. PREREQUISITE: 5008.

5062 - SKILL BUILDING 4 credits

This course is designed for the student who has had some experience with shorthand but does not feel secure enough to proceed with Shorthand 2. The course will include a thorough review of College Gregg Shorthand principles. Emphasis will be placed upon the development of speed and accuracy in taking dictation in conjunction with spelling, punctuation and vocabulary. The minimum requirement for the course will be 70 words per minute for two minutes with 95 percent accuracy. The course meets five hours per week.

**5120 - MACHINE SHORTHAND 1**

6 credits

This course will enable the student to gain a mastery of the basic machine shorthand theory. Emphasis will be placed on stroking technique and vocabulary development through the reading and writing of shorthand. Machine shorthand tapes correlated with the textbook are used in the development of dictation speed and the reading of notes accurately. The course meets eight hours per week.

5121 - MACHINE SHORTHAND 2

6 credits

This course will enable the student to gain a mastery of advanced machine shorthand theory and to develop shorthand and transcription skill on unfamiliar material. The student will develop the ability to separate phonetically unfamiliar words according to machine shorthand theory and to write these words accurately in shorthand. The course meets eight hours per week. PREREQUISITE: 5120, 5008.

5122 - MACHINE SHORTHAND 3

6 credits

The course is designed to familiarize students with specialized dictation material in the areas of medical, legal, and technical dictation. Dictation material will also include basic question and answer material, as well as an introduction to multi-voice dictation. The course meets eight hours per week. PREREQUISITE: 5121, 5009.

5123 - CLERICAL OFFICE PRACTICE 1

3 credits

In this course the student learns the office procedures involved in records management in the alphabetic, numeric, and geographic arrangement of correspondence, in filing by subject and using an index, in maintaining files efficiently, and in decision making in records management. He (she) also masters the office procedures involved in interpersonal communication in receiving incoming mail, preparing outgoing mail, and in receiving incoming and placing outgoing calls. The slide-tape presentation of the instruction aids in individual progress, and the student masters the required skills at his (her) own pace.

5126 - LEGAL OFFICE PROCEDURES

3 credits

This course is designed to acquaint the student with the Massachusetts court system, including local civil and criminal

practices and procedures. The student will deal with the role of the lawyer, the legal secretary, and the client; substantive law; torts; contracts; family law; wills and intestate succession; criminal and civil law; appellate procedure; consumer protection; and domestic relations. The student will also receive instruction and practice in filing procedures and telephone techniques. Field trips will be arranged, as well as speakers from the courts and legal offices in the greater Springfield area. The course meets three hours per week. PREREQUISITE: 5009.

5127 - COURT REPORTING TECHNOLOGY

3 credits

The course is designed to familiarize students with the Massachusetts court system, transcript format for district and superior courts, as well as reporting techniques using machine shorthand. Dictation material will include multi-voice courtroom testimony specializing in legal, medical, and technical dictation. As part of the course students will be expected to attend actual cases and take and transcribe complete courtroom testimony. The course meets three hours per week. PREREQUISITE: 5122, 5010.

5129 - MEDICAL MACHINE TRANSCRIPTION

1 credit

This course is designed to introduce the medical assistant to machine transcription. Stress will be placed on skill development and production of accurate medical reports. PREREQUISITE: 5008 and 5012.

7044 - MEDICAL ASSISTING TECHNIQUES FOR SECRETARIES 1

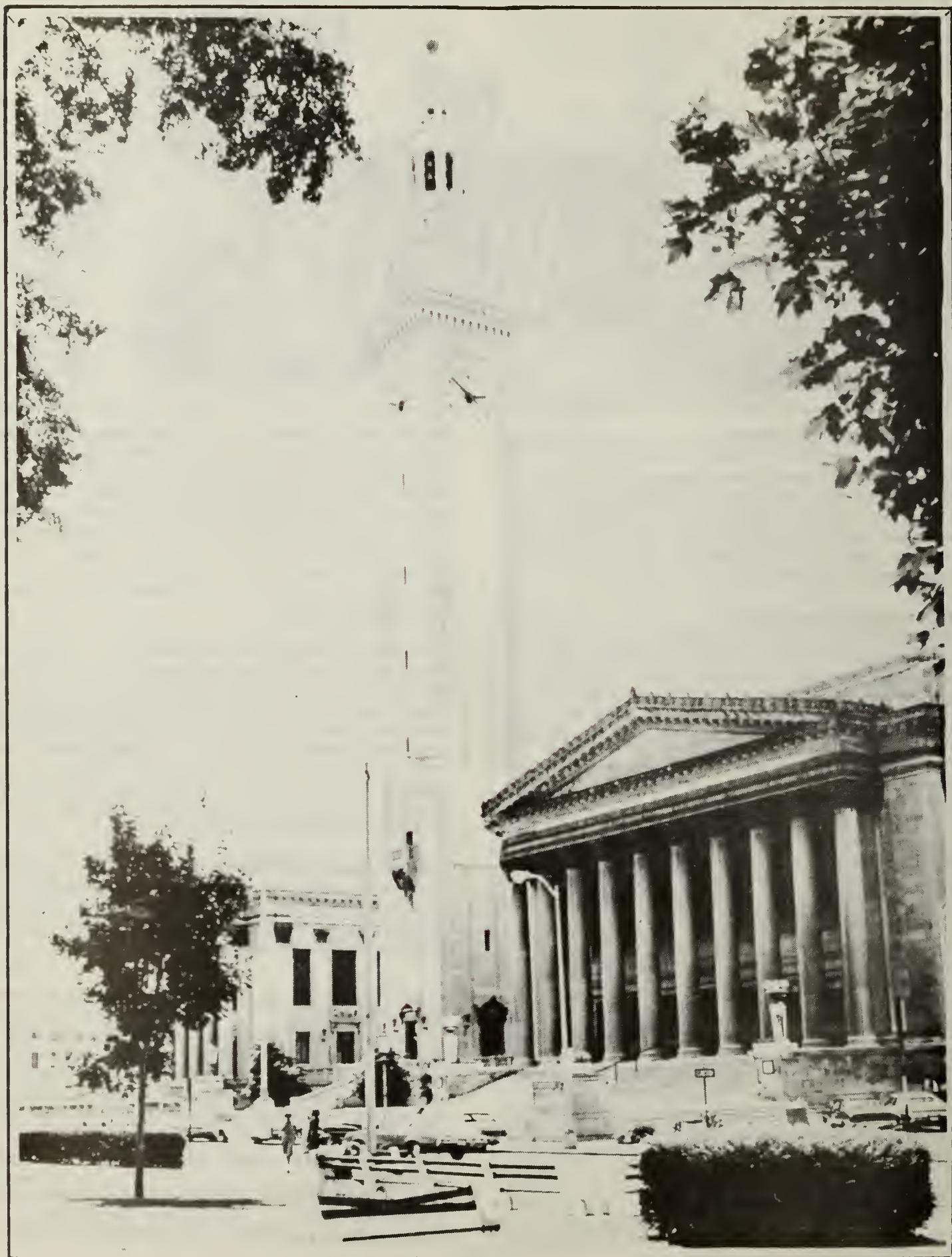
4 credits

This course is constructed to prepare the student to become an efficient medical secretary whether it is in a physician's office, hospital or any other agency delivering health care. There are five class hours a week. Two hours will be devoted to lecture, one hour to terminology and two hours to be used for practicing lab procedures.

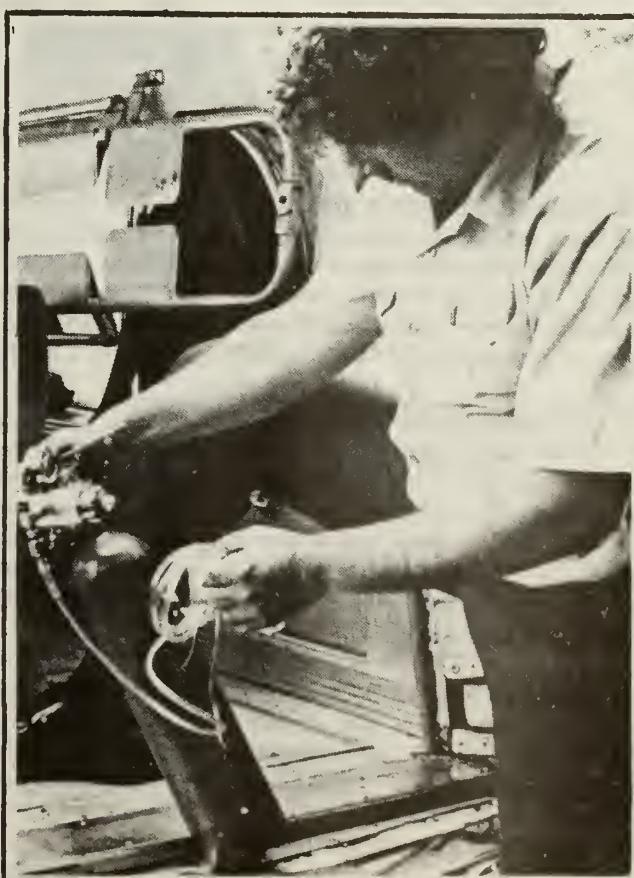
7045 - MEDICAL ASSISTING TECHNIQUES FOR SECRETARIES 2

4 credits

Continuation of advanced theory and terminology. Selected laboratory procedures will include electrocardiogram, cardiopulmonary resuscitation and other first aid procedures.



community services



FIRE PROTECTION & SAFETY TECHNOLOGY

DEPT. 16

The firefighter's world is a constant challenge of civil strife, chemicals, plastics, and tactical decisions influencing lives, homes, industries, and often the entire economic stability of a community. To cope with these demands, the firefighters need professional training.

This curriculum is designed to provide professional training for students in careers as technicians in fire protection and safety agencies. Careers include opportunities in municipal, state and federal agencies, as well as insurance companies and industries. This program is designed to meet the needs of potential and in-service fire-fighters by providing practical and technical instruction to those who will be serving the greater Pioneer and Connecticut Valley Communities.

SEMESTER 1

| No. | Course Title | Class | Lab | Credits |
|------|---------------------------------|-------|-----|---------|
| 1004 | English Composition 1 | 3 | | 3 |
| | Mathematics 2331, 32, 33 | 3 | | 3 |
| 9770 | Introduction to Fire Protection | 3 | | 3 |
| 9773 | Fundamentals of Fire Prevention | 3 | | 3 |
| 4086 | General Psychology | 3 | | 3 |
| | | 15 | | 15 |

SEMESTER 2

| No. | Course Title | Class | Lab | Credits |
|------|------------------------------------|-------|-----|---------|
| 1005 | English Composition 2 | 3 | | 3 |
| 9775 | Building Construction | 3 | | 3 |
| 9780 | Organ. & Mgmt. of Fire Depts. | 3 | | 3 |
| 4008 | Sociology 1 | 3 | | 3 |
| | Social Science/Humanities Elective | 3 | | 3 |
| | | 15 | | 15 |

SEMESTER 3

| No. | Course Title | Class | Lab | Credits |
|------|----------------------------------|-------|-----|---------|
| 9774 | Fire Hydraulics and Equipment | 3 | | 3 |
| 9776 | Fire Fighting Tactics & Strategy | 3 | | 3 |
| 9778 | Fire Protection Systems | 3 | | 3 |
| 3002 | Chemistry | 3 | 1 | 4 |
| | Elective | 3 | | 3 |
| | | 15 | 1 | 16 |

SEMESTER 4

| No. | Course Title | Class | Lab | Credits |
|------|-----------------------------|-------|-----|---------|
| 9504 | Hazardous Materials | 3 | | 3 |
| 9781 | Fire Causes and Detection | 3 | | 3 |
| 9779 | Advanced Protection Systems | 3 | | 3 |
| 3012 | Physics | 3 | 1 | 4 |
| | Elective | 3 | | 3 |
| | | 15 | 1 | 16 |

9504 - HAZARDOUS MATERIALS

3 credits

This course includes a review of basic chemistry, storage and handling of hazardous materials, laws, standards and fire fighting practices within extreme fire hazard areas. Demonstrations will illustrate and supplement the class work. Required for graduation. PREREQUISITE: Chemistry 1 (3002).

9770 - INTRODUCTION TO FIRE PROTECTION

3 credits

This course introduces the philosophy and history of fire protection, history of loss of life and property by fire, review of municipal fire defenses, study of the organization and function of federal, state and private fire protection agencies, and a survey of professional fire protection career opportunities. Required for graduation. Concurrently with Building Construction (9775).

9772 - LEGAL ASPECTS OF FIRE PROTECTION

3 credits

A study of legal rights and duties, liability concerns and responsibilities of the fire department organization while carrying out their duties. PREREQUISITE : Introduction to Fire Protection (9770).

9773 - FUNDAMENTALS OF FIRE PREVENTION

3 credits

This course is concerned with the organization and function of fire prevention organization, inspections, surveying and mapping procedures, recognition of fire hazards, engineering a solution of the hazard, enforcement of the solution, and public relations as affected by fire prevention. Required for graduation. PREREQUISITE: Introduction to Fire Protection (9770) or Building Construction (9775).

9774 - FIRE HYDRAULICS & EQUIPMENT

3 credits

Course in incompressible fluids including: fluid properties, principles of fluid status, fluid flow system principles, pipe friction and heat loss, flow measurements, pumps, and other hydraulic devices and machinery. Applications are related to fire protection systems such as sprinklers, standpipes, hoses, nozzles, pumper, and water supply systems. Demonstrations will illustrate and supplement the principles developed in the class. Required for graduation. PREREQUISITES: College Algebra (2331-34).

9775 - BUILDING CONSTRUCTION

3 credits

Exploration of building construction and design with emphasis focused on fire protection concerns, review of statutory and suggested guidelines, local, state, and national. Required for graduation. Concurrently with Introduction to Fire Protection (9770).

9776 - FIRE FIGHTING TACTICS & STRATEGY

3 credits

This course reviews fire chemistry, equipment and manpower, basic fire fighting tactics and strategy, methods of attack, preplanning fire problems. Fire situations are presented for analysis and study, consistent with accepted fire fighting practices. Required for graduation. PREREQUISITE: Fire Hydraulics and Equipment (9774).

9778 - FIRE PROTECTION SYSTEMS

3 credits

The detection and extinguishing systems of both automatic and manual types are studied, including sprinkler and standpipe systems, inert gases, foam and dry chemicals, temperature and smoke responsive devices, and alarm and signaling system. Demonstration will illustrate and supplement the class work. Required for graduation. PREREQUISITE: Fundamentals of Fire Protection (9773).

9779 - ADVANCED PROTECTION SYSTEMS

3 credits

This course is a continuation of 9778, and it is presented for those people interested in advanced fire control systems. Sprinkler systems will be given a great amount of attention in this course. Carbon dioxide, Dry chemicals, Foam systems, Halogen agents will also be discussed.

9780 - ORGANIZATION & MANAGEMENT OF FIRE DEPARTMENTS

3 credits

An exploration of organization principles with emphasis on fire department organization; a study of the history, types, methods and principles of fire department organization, both formal and informal, line and staff. Emphasis placed on supervisory responsibilities and functions. Required for graduation. PREREQUISITE: Fundamentals of Fire Protection (9773).

9781 - FIRE CAUSES & DETECTION (ARSON)

3 credits

This course concerns the history, development and philosophy of fire investigation and detection, including inspection techniques, gathering evidence and development of technical



reports, fundamentals of arson investigation, processing of criminal evidence and criminal procedures related to various state and local statutes. PREREQUISITE: Fundamentals of Fire Protection (9773).

CE9782 - EMERGENCY MEDICAL TRAINING 6 credits

This course consists of 81 hours of instruction, practical work and in-hospital observation. It is designed for the person who responds to emergency calls to provide immediate care to the critically ill and injured and transport the patient to a medical facility. It will develop his skill in determining the nature and extent of illness or injury and in establishing priorities for emergency care. It covers such topics as opening and maintaining an airway, cardiac resuscitation, controlling of hemorrhage, treatment of shock, immobilization of fractures, assisting in childbirth, management of mentally disturbed patients as well as light rescue skills and extrication from entrapment.

9784 - FIRE CODES AND ORDINANCES 3 credits

A study of the history and development of codes which influence the field of fire prevention. Emphasis is placed on the nature and scope of legal statutes and related codes in fire prevention and control. PREREQUISITE: Building Construction (9775).

9785 - PUBLIC, LABOR, & HUMAN RELATIONS

3 credits

This course concerns labor negotiations and relations in general and the fire service in particular stressing competitive behavior. Theories are developed in terms of labor-management relations and problem solving processes which lend help to identify, enlarge, and act upon the common interests of the parties in municipal or governmental roles. PREREQUISITE: Organization and Management of Fire Departments (9780).

9786 - SPECIAL OCCUPANCY FIRE SYSTEMS

3 credits

A study of the causes of fires, inspection and investigation procedures, and fire prevention. Identification and control of electrical, mechanical, and radioactive hazards are stressed along with industrial safety equipment and practices. PREREQUISITE: Hazardous Materials (9504).

9790 - ARSON 2 3 credits

A continuation of Fires Causes and Detection (Arson). PREREQUISITE: Fire Causes and Protection (9781).

LAW ENFORCEMENT

DEPT. 15

A police science program is offered for students desiring to develop a career in Law Enforcement. In addition, there is opportunity for in-service police officers who are desirous of improving their knowledge and abilities through study of specific police science courses and various general education subjects.

The objective of this two-year program is to familiarize the student with legal, technical, and practical aspects of police procedures. The ever-increasing crime rate, changing social order, changes in the criminal laws and major court decisions are all factors that have made the law enforcement officers' role one of extreme importance and ever-increasing complexity in modern society. Toward this end, the student will be provided with a strong background in the basic administration of justice as well as a general knowledge of the constitutional safeguards as afforded in the Bill of Rights. This program also includes study in the social science area and a general choice of electives.

In-service personnel may be eligible for federal grants under the Law Enforcement Education Program (LEEP), which began operation in 1969 following passage of the Omnibus Crime Control and Safe Streets Act of 1968.

SEMESTER 1

| No. | Course Title | Class | Lab | Credits |
|------|----------------------------------|-------|-----|---------|
| 1004 | English Composition 1 | 3 | | 3 |
| 4008 | Introduction to Sociology 1 | 3 | | 3 |
| 9754 | Criminal Procedures 1 | 3 | | 3 |
| 9761 | Introduction to Criminal Justice | 3 | | 3 |
| | Elective | 3 | | 3 |
| | | 15 | | 15 |

SEMESTER 2

| No. | Course Title | Class | Lab | Credits |
|------|-------------------------------------|-------|-----|---------|
| 1005 | Composition 2: Intro. to Literature | 3 | | 3 |
| 4009 | Social Problems | 3 | | 3 |
| 9764 | Criminal Procedures 2 | 3 | | 3 |
| 9756 | Criminal Evidence | 3 | | 3 |
| | Elective | 3 | | 3 |
| | | 15 | | 15 |

SEMESTER 3

| No. | Course Title | Class | Lab | Credits |
|------|-------------------------------|-------|-----|---------|
| 4086 | General Psychology | 3 | | 3 |
| 4083 | Intro. to Political Science 1 | 3 | | 3 |
| 9753 | Criminal Law 1 | 3 | | 3 |
| 9755 | Criminal Investigation | 3 | | 3 |
| | Elective | 3 | | 3 |
| | | 15 | | 15 |

SEMESTER 4

| No. | Course Title | Class | Lab | Credits |
|------|-----------------------------------|-------|-----|---------|
| 1153 | Conversational Spanish | 3 | | 3 |
| 4087 | Prin. of Normal/Abnormal Behavior | 3 | | 3 |
| 9762 | Criminal Law 2 | 3 | | 3 |
| 9769 | Law Enforce. Mgmt. & Planning | 3 | | 3 |
| | Elective | 3 | | 3 |
| | | 15 | | 15 |

CE9686,9763-PAROLE & PROBATION 1 & 2 3 cr. each

This course familiarizes the student planning a career in Law Enforcement with laws, rules, and regulations attendant with Probation and Parole and Corrections, as well as with the basic concepts and mechanics of each. The course also examines the organizational structure of Probation, the Parole Board, and the Department of Corrections in Massachusetts. Theories employed in the sentencing and rehabilitation of different kinds of offenders will be studied, along with an analysis of rehabilitation of the offender in the community versus in penal institutions. Utilization and effectiveness of work-release programs half-way houses, and treatment centers for drug offenders and alcoholics will be considered.



9753 - CRIMINAL LAW 1

3 credits

This course explores and examines the substantive law of crimes, including the general and special areas of Criminal Laws. Of special interest is a survey of crimes against the person, crimes against property, parties to crimes, defenses based on justification, and the nature of the criminal act and conduct. Emphasis is placed on analysis of elements of particular crimes, offenses, and punishments through an examination of the statutes and case example. PREREQUISITE: Introduction to Criminal Justice (9761) or permission of the Department Chairman.

9754 - CRIMINAL PROCEDURES 1

3 credits

To familiarize the student planning a career in law enforcement with the Constitutional requirements and safeguards attendant throughout the criminal process, from investigation through arrest, interrogation, indictment, trial, and sentencing. Included is an in-depth review of the Bill of Rights and its influence in modern society. Heavy emphasis is placed on actual case study and a review of recent Supreme Court decisions, especially as related to practical situations and problems confronting Law Enforcement personnel. Selected readings focus on practical application to Constitutional principles to practical situations. PREREQUISITE: Introduction to Criminal Justice (9761) or permission of the Department Chairman.

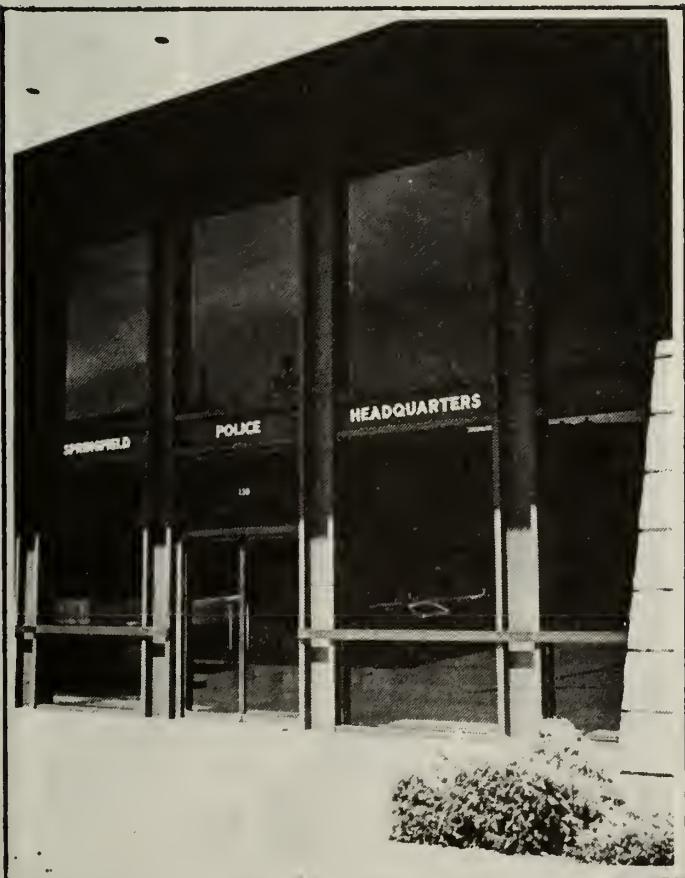
9761 - INTRODUCTION TO CRIMINAL JUSTICE 3 credits
An introduction and basic survey of criminal justice and the court systems, both state and federal. The course explores the concept of bail, the functions and roles of the Judge, Prosecutor, Grand Jury, Defense Attorney, and Public Defenders, and sentencing in the courts. Also examined are the functions and objectives of the Probation Officer and Parole Officer, especially as related to rehabilitation of the offender. The role of the policeman in modern society is discussed and explored in detail.

9762 - CRIMINAL LAW 2 3 credits
Continuation of Criminal Law 1 (9753). PREREQUISITES: Criminal Law 1 (9753) and introduction to Criminal Justice (9761).

9764 - CRIMINAL PROCEDURES 2 3 credits
Continuation of Criminal Procedures 1 (9754). PREREQUISITES: Criminal Procedures 1 (9754) and introduction to Criminal Justice (9761) or permission of the Department Chairman.

9769 - LAW ENFORCEMENT MANAGEMENT & PLANNING 3 credits
Consideration of police problems at the administrative level, including coordination of all branches of a police department. An evaluation of line, staff, and auxilliary functions and the interrelationship of each. The purpose, need, and scope of planning in the police operation, including staffing, correction of data, and use of data processing.

CE before a course number indicates: Continuing Education (offered currently only in the Evening Division.).



9755 - CRIMINAL INVESTIGATION 3 credits
An introduction to field investigation, including conduct at the scene of the crime, interviewing and interrogation of witnesses and suspects, the use of informants, and techniques of surveillance. Emphasis is placed on special investigative techniques and on court procedure of the police case.

9756 - CRIMINAL EVIDENCE 3 credits
An analytical study of the rules of evidence, including such general areas as Relevancy and Materiality, Hearsay Evidence, Introduction of Writings, Competency and Privilege, and Parole Evidence rule. Probative matter legally presented at the trial of a criminal case is given special attention. Also examined are rules concerning the admission of evidence in such specific areas as Search and Seizure, Pre-Trial Identifications, admission of confessions, electronic surveillance, presumptions and privileges. PREREQUISITES: Criminal Procedures 1 (9754) and Criminal Procedures 2 (9764) or permission of the Department Chairman.

CE 9757 - JUVENILE PROCEDURES 3 credits
This course examines the role of the police in delinquency prevention and the make-up of Youth Service Division within the Police Department. Emphasis is on theory, administration, control, treatment, confinement, community resources, relationships with the public and the juvenile court.

CE 9760 - LAW ENFORCEMENT PHOTOGRAPHY 3 credits
The objective of this course is to give police officers an introduction to photography in law enforcement and police work generally. Various photographic techniques are illustrated in relation to their possible use in several areas of law enforcement. Emphasis is on photography as a valuable tool in law enforcement.

CE9767 - POLICE-COMMUNITY RELATIONS 3 credits
This course will examine the relationship between police and the community they serve. This relationship has often been marked by hostility and lack of confidence in the police, particularly in minority group areas. How this hostility is reflected in day to day police operations, recruiting, morale and safety of the individual officer will be examined through the course readings, lectures and discussion. The response of police to these pressures will also be examined.

The problem of police ethics and the role this plays in developing a police image in the community will be explored. What part police press relations plays in the development of police-community relations will be reviewed through actual police related news stories. The ultimate question of freedom versus authority of the police state versus constitutional democracy will be examined in relationship to the course readings and discussions.

CE3325 - FORENSIC SCIENCE 3 credits
An introductory survey aimed at providing the student with a basic general understanding of the field of forensic science, including procedures commonly employed at a crime scene investigation as well as in the laboratory. In addition this course is aimed at introducing the student to the application of various fields of science, i.e., medicine, pharmacy, chemistry, etc., for the purposes of obtaining admissible evidence for use in court trials. In general, the laboratory and scientific process as used in supporting the law enforcement function is examined. The lecture method is the primary source of instruction together with laboratory experimentation on a limited basis.

OCCUPATIONAL SAFETY & HEALTH TECH.

DEPT. 17

In 1970 the United States Congress enacted the Occupational Safety and Health Act. The primary emphasis of the Act is to provide for the safety and health of the worker. The implementation of the mandate requires the following: improvement of existing safety and health programs; establish employer/employee responsibility; authorize the Occupational Safety and Health Administration to set safety and health standards; encourage individual states to assume responsibilities and provide for reporting procedures.

STCC's Associate in Science in Occupational Safety and Health Technology Program focuses on managerial, supervision and employee training. Included is analysis of safety and health problems, recognition of potential hazards and the development of programs to carry out the firm's commitment to the safety and health of its personnel.

A strong emphasis is placed on an understanding of management methods and their relationships to safety; leadership by the employees; safety and healthful working conditions and safe work practices by employees.

Included in the four semester program are electives that must be chosen in related technology courses. It is important to seek a faculty advisor when selecting courses in order that the student follows a course of study best suited to his goals.

SEMESTER 1

| No. | Course Title | Class | Lab | Credits |
|----------|-----------------------------|-------|-----|---------|
| 9509 | Intro. to Industrial Safety | 3 | | 3 |
| 1004 | English 1 | 3 | | 3 |
| 2331-2-3 | Math (College Algebra) | 3 | | 3 |
| 3002 | Chemistry 1 | 3 | 3 | 4 |
| 4073 | Human Relations | 3 | | 3 |
| | | 15 | 3 | 16 |

SEMESTER 2

| No. | Course Title | Class | Lab | Credits |
|------|--------------------------------------|-------|-----|---------|
| 9510 | O.S.H.T. 1 | 3 | | 3 |
| 1008 | Technical Report Writing | 3 | | 3 |
| 4093 | Intro. to Industrial Psychology | 3 | | 3 |
| 9504 | Hazardous Materials | 3 | | 3 |
| 9513 | Industrial Hygiene Familiarization 1 | 3 | 3 | 4 |
| | | 15 | 3 | 16 |

SEMESTER 3

| No. | Course Title | Class | Lab | Credits |
|------|-------------------------------|-------|-----|---------|
| 9511 | O.S.H.T. 2 | 3 | | 3 |
| 3112 | Physics 1 | 3 | 3 | 4 |
| 5050 | Principles of Management | 3 | | 3 |
| 1007 | Speech | 3 | | 3 |
| | Elective - Related Technology | 3 | | 3 |
| | | 15 | 3 | 16 |

SEMESTER 4

| No. | Course Title | Class | Lab | Credits |
|------|--------------------------------------|-------|-----|---------|
| 9514 | Industrial Hygiene Familiarization 2 | 3 | | 3 |
| 9512 | O.S.H.T. 3 | 3 | 3 | 4 |
| 2016 | Statistics | 3 | | 3 |
| | Elective - Related Technology | 3 | | 3 |
| | Elective - Related Technology | 3 | | 3 |
| | | 15 | 3 | 16 |

9509 - INTRODUCTION TO INDUSTRIAL SAFETY 3 credits

An introduction to the basic principles and techniques of occupational safety and health. Historical perspectives. A review of the important standards, codes and regulations especially as related to the Occupational Safety and Health Act; with particular emphasis on application of these codes and standards to typical work situations.

9510 - OCCUPATIONAL SAFETY & HEALTH 1 3 credits

Introduction to occupational safety and health hazards associated with mechanical systems, materials handling,

electrical systems, chemical processes. Illustrates controls through engineering revision, safeguarding and personal protective equipment. Emphasis placed on recognition, evaluation and control of occupational safety and health hazards. Instrumentation and sampling techniques associated with hazards in these areas will be covered. Field work will supplement theory classes.

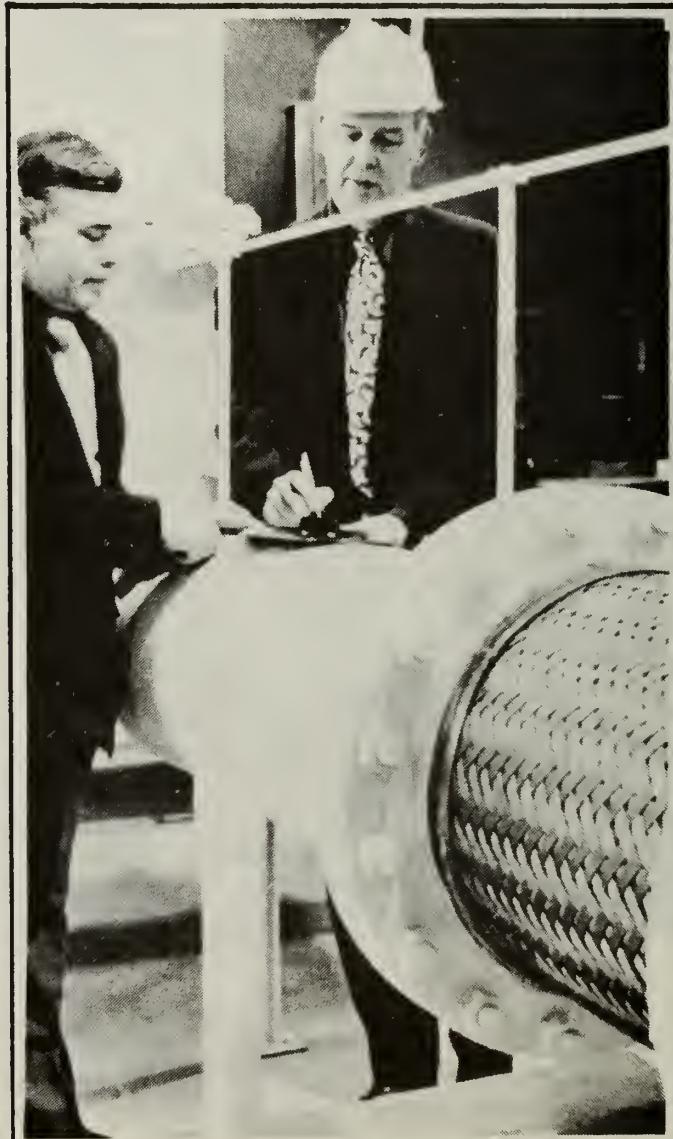
9511 - OCCUPATIONAL SAFETY & HEALTH 2 3 credits

Emphasis on occupational safety and health hazards associated with chemical, physical and biological stresses; constraints imposed; control measures through engineering revision, isolation, substitution, ventilation stressed. Instrumentation and sampling techniques associated with hazards in these areas will be covered. Field work will supplement theory classes.

9512 - OCCUPATIONAL SAFETY & HEALTH 3 3 credits

This course introduces the O.S.H.A. student to the basic principles of management as it relates to the safety professional. Compliance costs; workman's comp. costs, fire and liability premiums, etc., will be covered in relation to overall production costs. Psychology, Sociology, Supervisors Training, Systems Safety and Product Liability will also be covered in relationship to the industrial environment.

PREREQUISITE: 9510.



PUBLIC ADMINISTRATION

DEPT. 58

The Public Administration program is uniquely designed to meet the needs of today's public employee—municipal, county, state or federal—as well as those seeking a first job in government. It offers the opportunity to prepare for government service, or to upgrade on-the-job skills for promotion.

The program provides a number of flexible options to students:

- (1) They may take a few courses in an area of particular interest to them;
- (2) They may enroll in the one-year certificate program;
- (3) They may enroll in the two-year career program leading to the A.A. degree in Public Administration;
- (4) They may enroll in the A.A. transfer program which is designed to be equivalent to the first two years of the B.A. degree.

The program is flexible, for it allows students to move from one option to another.

This program is designed with the public employee in mind. The Public Administration courses are designed both to improve on-the-job performance, as well as to result in a certificate or degree. These courses are taught both by permanent college faculty and presently employed public servants who are academically qualified. Courses can be offered either at the STCC campus, or at the employee's place of work (given sufficient enrollment). For the convenience of students, classes will be scheduled during the day, late afternoon and early evening. Finally, students may elect to complete the program at their own pace.

ONE-YEAR CERTIFICATE PROGRAM

SEMESTER 1

| No. | Course Title | Class | Lab | Credits |
|------|---------------------------------|-------|-----|---------|
| 4114 | Intro. to Public Administration | 3 | | 3 |
| 5083 | Labor Management Relations | 3 | | 3 |
| 5075 | Principles of Organization | 3 | | 3 |
| 4073 | Human Relations at Work | 3 | | 3 |
| | Elective (1) | 3 | | 3 |
| | | 15 | | 15 |

SEMESTER 2

| No. | Course Title | Class | Lab | Credits |
|------|---------------------------------|-------|-----|---------|
| 5078 | Public Personnel Administration | 3 | | 3 |
| 5254 | Coll. Bargaining-Public Sector | 3 | | 3 |
| 5082 | Municipal/State Budgeting | 3 | | 3 |
| | Elective (2) | 3 | | 3 |
| | | 12 | | 12 |

- (1) 4083 - Am. Gov't and Politics, or
4079 - Stata Gov't, or
4080 - Municipal Gov't
- (2) 5077 - Administrative and Municipal Law, or
5081 - Public Relations, or
5084 - Municipal and Regional Planning, or
5085 - Quantitative Analysis for Public Administrators

CAREER PROGRAM

SEMESTER 1

| No. | Course Title | Class | Lab | Credits |
|------|---------------------------------|-------|-----|---------|
| 4114 | Intro. to Public Administration | 3 | | 3 |
| 5083 | Labor-Mgt. Relations | 3 | | 3 |
| 4083 | Am. Gov't and Politics | 3 | | 3 |
| 1004 | English Composition 1 | 3 | | 3 |
| 4086 | General Psychology | 3 | | 3 |
| | | 15 | | 15 |

SEMESTER 2

| No. | Course Title | Class | Lab | Credits |
|------|--------------------------------|-------|-----|---------|
| 5075 | Princ. of Organization | 3 | | 3 |
| 5254 | Coll. Bargaining - Pub. Sector | 3 | | 3 |

| | | | | |
|------|--------------------------------|----|--|----|
| 5079 | Stata Gov't, or | | | |
| 5080 | Municipal Gov't | 3 | | 3 |
| 1005 | English Comp.-Intro. to Lit. 2 | 3 | | 3 |
| 4093 | Intro. to Ind. Org. Psych. | 3 | | 3 |
| | | 15 | | 15 |

SEMESTER 3

| No. | Course Title | Class | Lab | Credits |
|------|---------------------------------|-------|-----|---------|
| 5078 | Public Personnel Administration | 3 | | 3 |
| 5081 | Public Relations | 3 | | 3 |
| 4008 | Intro. to Sociology | 3 | | 3 |
| | Elective - Humanities | 3 | | 3 |
| | Elective - Science or Meth | 3 | | 3 |
| | | 15 | | 15 |

SEMESTER 4

| No. | Course Title | Class | Lab | Credits |
|------|---------------------------------------|-------|-----|---------|
| 5082 | Municipal/State Budgeting, or | | | |
| 5077 | Administrative & Municipal Law | 3 | | 3 |
| 5084 | Municipal & Reg. Planning, or | | | |
| 5085 | Quantitative Analysis for Public Adm. | 3 | | 3 |
| 4014 | Economics 1 | 3 | | 3 |
| | Elective - Humanities | 3 | | 3 |
| | Elective - Science or Math | 3 | | 3 |
| | | 15 | | 15 |

TRANSFER PROGRAM

SEMESTER 1

| No. | Course Title | Class | Lab | Credits |
|------|---------------------------------|-------|-----|---------|
| 4114 | Intro. to Public Administration | 3 | | 3 |
| 5083 | Labor Management Relations | 3 | | 3 |
| 4083 | Am. Gov't and Politics | 3 | | 3 |
| 1004 | English Composition 1 | 3 | | 3 |
| | Elective - Humanities | 3 | | 3 |
| | | 15 | | 15 |

SEMESTER 2

| No. | Course Title | Class | Lab | Credits |
|------|------------------------------------|-------|-----|---------|
| 5075 | Princ. of Organization | 3 | | 3 |
| 5254 | Coll. Bargaining Pub. Sector | 3 | | 3 |
| 5079 | State Gov't or | | | |
| 5080 | Municipal Gov't | 3 | | 3 |
| 1005 | English Comp. Intro. to Lit. 2, or | | | |
| 1008 | Technical Report Writing | 3 | | 3 |
| | Elective - Math or Science | 3 | | 3 |
| | | 15 | | 15 |

SEMESTER 3

| No. | Course Title | Class | Lab | Credits |
|------|---------------------------------|-------|-----|---------|
| 5075 | Public Personnel Administration | 3 | | 3 |
| | Elective - Social Science | 3 | | 3 |
| | Elective - Social Science | 3 | | 3 |
| | Elective - Humanities | 3 | | 3 |
| | Elective - Math or Science | 3 | | 3 |
| | | 15 | | 15 |

SEMESTER 4

| No. | Course Title | Class | Lab | Credits |
|------|--------------------------------|-------|-----|---------|
| 5082 | Municipal/State Budgeting, or | | | |
| 5077 | Administrative & Municipal Law | 3 | | 3 |
| 1007 | Speech | 3 | | 3 |
| | Elective - Social Science | 3 | | 3 |
| | Elective - Humanities | 3 | | 3 |
| | Elective - Math or Science | 3 | | 3 |
| | | 15 | | 15 |

4114 - INTRODUCTION TO PUBLIC ADMINISTRATION

3 credits

The purpose of this course is to understand bureaucracy in general and the American civil service in particular. Emphasis will be placed upon (1) the theory of bureaucracy and government operations; and (2) an understanding of how a public administrator concretely operates, often in divergence from theory. The underlying thrust throughout will be to prepare students (1) to better comprehend the role of public administration in an increasingly "governmentalized" and "bureaucratized" world; and (2) to aid others in preparation for future possible government service.

5075 - PRINCIPLES OF ORGANIZATION

3 credits

Basic concepts of supervision and management, duties and



responsibilities of supervisors. Planning, organizing and directing the work. Development of supervisory skills; counseling, coaching, discipline, employee complaints. Evaluation of performance, evaluation interviews. Principles of learning and motivation, demonstration and practice. Instructional methods, employee training. Improving work methods and work simplification, job standards. Working with unions.

5077 - ADMINISTRATION AND MUNICIPAL LAW

3 credits

This course will be divided into two separate, yet complimentary sections; the first half of the course will deal with administrative laws and include concepts such as rule of law, discretion, the role of the ombudsman, etc. The second half of the course will cover the importance of municipal law and deal with topics such as civil service laws, debt limits, ordinances and bylaws, incorporations, etc.

5078 - PUBLIC PERSONNEL ADMINISTRATION 3 credits

The personnel function in bureaucracy; patronage and merit;

career service and political executives; authority and informal organization.

5079 - STATE GOVERNMENT

3 credits

State politics, organization and functions with emphasis on the role of the state in our federal system.

5080 - MUNICIPAL GOVERNMENT

3 credits

A survey of the governmental structure and function of American municipalities.

5081 - PUBLIC RELATIONS

3 credits

Public relations is conceived as an interacting process involving involving both program performance and communication. The more sophisticated aspects of public relations are covered, including analysis and research, composition of the public, community group relationships and historical and political perspectives. Covers citizen services, employee citizen relations, police and public relations, mass media, government reports and events, publication planning and printing, organization for public relations and employee relations and training.

5082 - MUNICIPAL & STATE FINANCE & BUDGET ADMINISTRATION

.3 cr.

A study of the systems of finance and the achievement of program objectives in public administration. Emphasis is placed upon aspects of the budgetary process that bear on fiscal policy and appropriations and includes state statutory requirements, the role of the legislature, the role of the financial officers, the role of the administrator, assessing and municipal finance, public purchasing and contracts, personnel aspects, school finances, impact of aid programs and long range fiscal planning.

5083 - LABOR MANAGEMENT RELATIONS

3 credits

An introduction to labor-management relations in the public sector: The history of the union movement; the evolution of pertinent laws and judicial decisions; an overview of union-management objectives; union expansion into spheres of management authority—security and seniority, grievances and arbitration, collective bargaining agreements.

5084 - MUNICIPAL & REGIONAL PLANNING

3 credits

The history and contemporary practices in municipal planning and the development of the methodology and techniques for analysis of today's planning. Review and discussion of the problem of identifying, selecting and reconciling appropriate goals of regional area development. Course includes the legal basis for zoning and for planning in Massachusetts and focuses on the relationship of land use to social and economic patterns.

5085 - QUANTITATIVE ANALYSIS FOR PUBLIC ADMINISTRATION

3 cr.

Introduction to basic research and statistical techniques as applied to special problems in the field of public administration.

5254 - COLLECTIVE BARGAINING IN THE PUBLIC SECTOR

3 cr.

A seminar in trends, principles, substantive issues and techniques of effective collective bargaining; problems in interpretation and administration of collective bargaining agreements. PREREQUISITE: Course no. 5083 or permission of the instructor.

engineering technologies



ADVANCED METAL MACHINING TECHNOLOGY

The advanced metal machining curriculum is designed for persons with basic machine knowledge and experience. Graduates will likely compete for positions well above starting salaries in the machining field. Given fundamental skills, knowledge, job experience and a specially designed broadly based program, students will receive advanced training for applied skills, technical or supervisory occupations in the metals machine field resulting in higher wages, job advancement and position security while providing increased economic and competitive advantages to his employer and the community. Minimum Grade Requirement: Students in Advanced Metal Machining Technology must receive a grade of "D" or better.

SEMESTER 1

| No. | Course Title | Class | Lab | Credits |
|------|---------------------------|-------|-----|---------|
| | Mathematics 2321, 22, 23 | 3 | | 3 |
| 6335 | Blue Print Reading | | 3 | 1 |
| 1004 | English Composition 1 | 3 | | 3 |
| 6336 | Machining 1 | 1 | 12 | 5 |
| 6054 | Manufacturing Processes 1 | 2 | 3 | 3 |
| | | 9 | 18 | 15 |

SEMESTER 2

| No. | Course Title | Class | Lab | Credits |
|------|--------------------------|-------|-----|---------|
| | Mathematics 2331, 32, 33 | 3 | | 3 |
| 6337 | Machining 2 | 1 | 12 | 5 |
| 1008 | Technical Report Writing | 3 | | 3 |
| 6268 | Mechanisms | 3 | | 3 |
| 6338 | Machining 3 | 1 | 12 | 5 |
| | | 11 | 24 | 19 |

SEMESTER 3

| No. | Course Title | Class | Lab | Credits |
|------|----------------------------|-------|-----|---------|
| 4073 | Human Relations at Work | 3 | | 3 |
| 3012 | Physics 1 | 3 | 3 | 4 |
| 6339 | Machining 4 | 1 | 12 | 5 |
| 6066 | Design of Machine Elements | 2 | 6 | 4 |
| 6342 | Prod. Processes | 3 | | 3 |
| | | 12 | 21 | 19 |

SEMESTER 4

| No. | Course Title | Class | Lab | Credits |
|------|-----------------------|-------|-----|---------|
| 4014 | Economics | 3 | | 3 |
| 4093 | Ind. Psychology | 3 | | 3 |
| 6340 | Specialized Mach. | | 3 | 1 |
| 6064 | Industrial Materials | 3 | | 3 |
| 6061 | Production Control | 4 | | 4 |
| 5054 | Production Management | 3 | | 3 |
| | | 16 | 3 | 17 |

6054 - MANUFACTURING PROCESSES 1 3 credits

Fundamental concepts of machining, safety and operations, theory of cutting tools, speeds and feeds, layout and inspection, jigs and fixtures.

6059 - WORK SIMPLIFICATION 3 credits

A broad approach to the use of motion and time study in industry. The uses of various types of charts and operational processes in general problem solving are developed. Typical problems requiring the application of operational analysis are undertaken. Consideration is also given to the work place, the work area and to human engineering. The problem solving technique of evaluating alternate solutions is stressed.

6061 - PRODUCTION CONTROL 4 credits

General consideration is given to various phases and elements of production control which are later applied to continuous process companies and typical job shops. Several problem cases serve as a basis for classroom discussion. In addition to a general introduction involving various types of manufacturing plants and their respective products, the course includes a study of the elements that contribute to a successful production control program. Production forecasting, product

development, control of materials, routing, scheduling, dispatching and follow-up are studied in sequence in terms of their significance and their relationship to production control. The course is based upon the idea that there is no standard production control procedure applicable to all manufacturing companies, but that there is a correct production control procedure which can be developed for any company, large or small.

6064 - INDUSTRIAL MATERIALS 3 credits

An introduction to engineering materials and their properties. Emphasis is placed on the factors which determine material properties and the process by which these properties can be changed in a controlled manner. Materials covered include steel, cast iron, non-ferrous metals and alloys, plastics, rubber and some other non-metallics.

6268 - MECHANISMS COURSE 3 credits

The material presented in this course is to acquaint the student with the functions of mechanical theory both graphically and analytically. It defines velocities and accelerations of points, gears, cams and intermittent motion.

6335 - BLUE PRINT READING 1 credit

Fundamental theory and practice of blue print reading and tolerance application.

6336 - METAL MACHINING 1 5 credits

Student will become familiar with the following: drilling and tapping, boring, counterboring, countersink, spotfacing, reaming, horizontal shaping and filing, hacksaws, powersaws, bandsaws, scales, micrometers, verniers, calipers and combination square.

6337 - METAL MACHINING 2 5 credits

Student will become familiar with the following: dial indicators, gage blocks, sinebar, various types of gages, air gages, electric and electronic measuring devices, comparator, use of surface plate, scribe, dividers and center punch. Also slot milling, slab milling, gang milling, form milling, angle milling, step milling and slotting, index head and index table work both horizontal and vertical.

6338 - METAL MACHINING 3 5 credits

After one semester's work with metal machining 1 and 2, the use of equipment related to inspection of the workpiece, use of gage blocks, sinebar and other allied equipment, surface finish and control checks. Familiarization with engine lathe work, roughland finish turning, facing, knurling, form turning, threading chuck work both three jaw and four jaw, then grinding of tool bits, drills, O.D. grinding, taper grinding, shoulder and step grinding, flat surface, slots, shoulders, angles and forms.

6339 - METAL MACHINING 4 5 credits

The concepts of numeric control principles and application, how to write a program point-to-point method in drilling, milling and contour milling using the flexowriter. More detailed layout using jigs and fixtures also will be studied. Special applications applicable to set-up on machinery also will be studied.

6340 - SPECIALIZED MACHINERY (FIELD TRIPS) 1 credit

Theory of planning, boring, honing, broaching, turret lathe, production machinery, abrasives, gears, screws threads, coating and finishing.

6342 - PRODUCTION PROCESSES 3 credits

The student will become familiar with how to process a job through manufacturing facilities, sequence of operations, tolerance chart usage, speeds and feeds.

AUTOMOTIVE TECHNOLOGY

DEPT. 70

The two-year Automotive Technology curriculum consists of practical work experience in inspecting, testing, servicing and repairing cars as well as a study of related technical subjects. A knowledge of basic scientific principles and technical information is emphasized so that students can understand why mechanical and technical difficulties occur. Instruction in management and business operations is included in this program to prepare graduates for junior supervisory positions in the automotive field. Major areas to be covered in the program are: engines, transmissions, differentials, brakes, carburetors, electrical systems and front end suspensions. The instructional strategies rely on lectures, demonstrations, overhead projectors, slide films, charts, text books and student participation in laboratory assignments in areas being covered.

New large quarters accommodate both classroom and shop labs. A separate engine lab equipped with live engines of the various manufacturers, the latest in electronic testing devices, front end alignment, tire truing and wheel balancing equipment, together with a separate dynamometer lab where vehicles can be run under actual road load conditions and be observed with attached electrical devices. Graduates are prepared for employment as automotive service technicians, service salesmen and managers and many other areas related to the automotive field.

Minimum Grade Requirement: Students in Automotive Technology and the Automotive Collision Technology programs must receive a grade of "D" or better. Attendance is a requirement and is taken into consideration.

SEMESTER 1

| No. | Course Title | Class | Lab | Credits |
|------|---------------------------|-------|-----|---------|
| 1004 | English Composition 1 | 3 | | 3 |
| 4073 | Mathematics 2321, 22, 23 | 3 | | 3 |
| 6099 | Human Relations at Work 3 | 3 | | 3 |
| 6101 | Gasoline Engines Systems | 2 | 2 | 3 |
| 6112 | Drive Line | 2 | 2 | 3 |
| | Machine Tool Techniques | | 3 | 1 |
| | | 13 | 7 | 16 |

SEMESTER 2

| No. | Course Title | Class | Lab | Credits |
|------|-------------------------------------|-------|-----|---------|
| 1005 | Composition 2: Intro. to Literature | 3 | | 3 |
| 3002 | Chemistry 1 | 3 | 3 | 4 |
| 6100 | Mathematics 2331, 32, 33 | 3 | | 3 |
| 6102 | Gasoline Engines Service | 2 | 2 | 3 |
| 6241 | Auto. Transmissions | 2 | 2 | 3 |
| | Prog. Engineering Graphics Mod.1 | | 3 | 1 |
| | | 13 | 10 | 17 |

SEMESTER 3

| No. | Course Title | Class | Lab | Credits |
|------|-------------------------|-------|-----|---------|
| 3009 | Automotive Chemistry | 3 | 3 | 4 |
| 4014 | Economics 1 | 3 | | 3 |
| 5022 | College Accounting 1 | 3 | | 3 |
| 6105 | Fuel & Electric Systems | 2 | 2 | 3 |
| 6103 | Brakes | 2 | 2 | 3 |
| | | 13 | 7 | 16 |

SEMESTER 4

| No. | Course Title | Class | Lab | Credits |
|------|-------------------------------|-------|-----|---------|
| 1008 | Technical Report Writing | 3 | | 3 |
| 5029 | Small Business Management | 3 | | 3 |
| 3012 | Physics 1 | 3 | 3 | 4 |
| 6104 | Steering and Front Suspension | 2 | 2 | 3 |
| 6106 | Engine Diagnosis and Tune-up | 2 | 2 | 3 |
| | | 13 | 7 | 16 |

6099 - GASOLINE ENGINE SYSTEMS 3 credits
Nomenclature, design, theory of operation and service. A study of the cooling, lubrication and positive crank case ventilation systems, antifreeze service, filters, seals, gaskets, valves, basic ignition circuits and measurement devices. Meets four times a week.

6100 - GASOLINE ENGINE SERVICE 3 credits

Disassembly and assembly of modern gasoline engines. Includes valves and valve operating mechanisms, pistons and connecting rod assemblies, crankshaft and bearings. Laboratory assignments provide experience in disassembly and reassembly of live lab engines. Students make wear measurements and adjustments according to factory recommended specifications. Meets four times a week.

6101 - DRIVE LINE 3 credits

The function, construction, operation, servicing and trouble shooting of conventional clutch assemblies, standard transmissions, propeller shafts and joints and differentials. Presented through lecture, demonstrations, and student participation in disassembly and reassembly of functional components. Meets four times a week.

6102 - AUTOMATIC TRANSMISSIONS 3 credits

Principles of operation, construction, servicing and trouble shooting. Covers fluid couplings, planetary gears, hydraulic controls, seals and adjustments. Students participate in disassembly and reassembly of selected transmissions along with actual testing and service work in the school laboratory. Meets four times a week.

6103 - BRAKES 3 credits

A study of basic hydraulics, operation and construction of dual master cylinders, wheel cylinders, disc brakes and power units. Instruction in system bleeding, machining of drums, disc and brake shoes are performed using modern service equipment. Student assignments provide actual work and diagnostic problems on cars in the laboratory. Meets four times a week.

6104 - STEERING AND FRONT SUSPENSION 3 credits

A study of steering geometry, linkage, springs, suspension systems, conventional and power steering adjustments and service. Tire wear problems, tire truing, wheel balance and wheel alignment services are done by the student using the very latest equipment. Meets four times a week.

6105 - FUEL AND ELECTRIC SYSTEMS 3 credits

Fundamentals of electricity and magnetism, construction and use of meters, testing and servicing of batteries, A.C. and D.C. generators and control units, starting systems, instruments and horn circuits. Includes a study of basic carburetion principles, fuel-air ratio requirements, venturi principles and basic carburetor circuits. Students participate in disassembly and reassembly of components and perform required bench tests. Meets four times a week.

6106 - ENGINE DIAGNOSIS AND TUNE-UP 3 credits

Covers theory of operation and testing of all components in the ignition system. A study of engine tune-up, exhaust emission devices and diagnosis using modern test procedures. Students participate in bench work and actual service problems using the latest electronic devices and the school's chassis dynamometer lab. Meets four times a week.

6112 - MACHINE TOOL TECHNIQUES 1 credit

Covers industrial safety practices, principles of measuring using semi-precision and precision devices. The development of skills in machining techniques, cutting and hand tool common to assembly and bench work. Familiarization and application of thread series, tolerances, clearances, limits, fits and other mechanical specifications as applied in the interchangeability of parts in the automotive industry. Includes lectures, demonstrations and actual laboratory participation by the student.

6241 - PROGRAMMED ENGINEERING GRAPHICS (MODULE 1) 1 credit

Instruments and their use, applied geometry, orthographic drawing and sketching.

BIO-MEDICAL TECHNOLOGY

DEPT. 39

Instrumentation is being used increasingly in medical, biological and research fields. This equipment has become so complex that technicians must have a detailed knowledge of bio-medical procedures and bio-medical terminology so that proper functioning of the equipment and safety of the patient can be assured.

The program provides the general technical knowledge and understanding of the more commonly used bio-medical instruments, components, systems and circuit techniques.

Minimum Grade Requirement: Bio-Medical Technology students shall maintain a minimum grade of C (2.0) for all departmental courses. A grade of "C" or lower will be considered a poor level of performance in any course.

SEMESTER 1

| No. | Course Title | Class | Lab Credits |
|------|--------------------------|-------|-------------|
| 2334 | Mathematics 2331, 32, 33 | 3 | 3 |
| 6125 | Slide Rule Math | 3 | 1 |
| 6117 | Basic Electricity 391 | 3 | 4 |
| 6004 | Electronic Devices 391 | 2 | 3 |
| 1004 | Bio-Med Techniques 391 | 3 | 3 |
| | English Composition 1 | 3 | 3 |
| | | 17 | 9 |
| | | | 18 |

SEMESTER 2

| No. | Course Title | Class | Lab Credits |
|------|-------------------------------------|-------|-------------|
| 6118 | Bio-Med Measurements 391 | 2 | 3 |
| 6119 | Electronic Circuits 391 | 2 | 3 |
| 6120 | Electronic Amplifiers 391 | 3 | 4 |
| 6005 | Bio-Med Techniques 392 | 3 | 4 |
| 1005 | Composition 2: Intro. to Literature | 3 | 3 |
| | | 13 | 12 |
| | | | 17 |

SEMESTER 3

| No. | Course Title | Class | Lab Credits |
|------|---------------------------------|-------|-------------|
| 6121 | Bio-Med Measurements 392 | 2 | 3 |
| 6122 | Trouble Shooting 391 | 2 | 3 |
| 6002 | Bio-Med Electronics Systems 391 | 3 | 4 |
| 6006 | Bio-Med Techniques 393 | 3 | 4 |
| 4008 | Introduction to Sociology 1 | 3 | 3 |
| | | 13 | 12 |
| | | | 17 |

SEMESTER 4

| No. | Course Title | Class | Lab Credits |
|------|-----------------------------------|-------|-------------|
| 4014 | Economics 1 | 3 | 3 |
| 6123 | Bio-Med Electronic Systems 392 | 2 | 3 |
| 6007 | Bio-Med Techniques 394 | 2 | 3 |
| 1007 | Fundamentals of Speech | 3 | 3 |
| 6124 | Bio-Med Desg/Equip. Selection 391 | 3 | 4 |
| | | 13 | 9 |
| | | | 16 |

6002 - BIO-MED ELECTRONIC SYSTEMS 391 4 credits

A continuation of the first year electronics courses with emphasis on circuits commonly found in bio-medical equipment; specialized power supplies D.C. amplifiers, differential amplifiers, chopper amps and operational amplifiers.

6004 - BIO-MED TECHNIQUES 391 4 credits

Introduction to cell structure and physiology. Course designed to give a concise survey of human anatomy and physiology emphasizing structure and function of each system.

Structural anomalies and functional disorders are studied in their relation to bio-medical instrumentation.

6005 - BIO-MED TECHNIQUES 392 4 credits

Introduction to basic chemistry emphasizing redox, chemical equilibrium and ionization. Includes some physiological chemistry and the integrating of concepts with related laboratory apparatus.

6006 - BIO-MED TECHNIQUES 393 4 credits

Application of knowledge gained in Bio-Med Techniques 6004 and 6005 to specific classes of instruments; e.g., centrifuges, spectro-photometers, recording and data-handling apparatus.

Principles of operation, application and service problems are discussed.

6007 - BIO-MED TECHNIQUES 394 3 credits

A continuation of Bio-Med Techniques 393 with emphasis on various types of physiological monitoring equipment.

6117 - ELECTRONIC DEVICES 391 3 credits

Resistors, batteries, conductors, insulators, voltmeters, ohmeters, ammeters, inductors and capacitors. Introduction to test equipment, such as signal generators and oscilloscopes. Taught concurrently with 6125.

6118 - BIO-MEDICAL MEASUREMENTS 391 3 credits

Bio-medical transducers used for temperatures, pressure and flow measurements are discussed, along with related concepts in physics.

Effort is concentrated on such topics as sensitivity, resolution, recordability, readability, linearity and accuracy, with reference to the above transducers. A prerequisite knowledge of the algebra of linear equations, exponential functions, as well as elementary trigonometry, is required.

6119 - ELECTRONIC CIRCUITS 391 3 credits

A.C. theory, inductive circuits, capacitive circuits, transformers, resonance, filter circuits and diode circuits. Taught concurrently with 6120.

6120 - ELECTRONIC AMPLIFIERS 391 4 credits

Semiconductor theory, basic transistor theory, basic vacuum tube theory, applications of transistors and tubes as amplifiers. Taught concurrently with 6119.

6121 - BIO-MEDICAL MEASUREMENTS 392 3 credits

This course is an extension of measurements (6118,391) where the interest is shifted to acoustical, optical and radiological devices.

6122 - TROUBLE SHOOTING 391 3 credits

Development of the logical procedures and skills necessary to trouble-shoot electronic and electromechanical systems effectively.

6123 - BIO-MED ELECTRONIC SYSTEMS 392 3 credits

An extension of Bio-Med Electronic Systems 391 which will cover such topics as telemetry, including AM and FM modulation, transmission and detection circuits. Also included is an introduction to logic and other simple control circuits. PREREQUISITE : 6002.

6124 - BIO-MED EQUIPMENT DESIGN/EQUIPMENT

4 credits

Special projects involving the construction, evaluation and selection of various components, materials and instruments to fit into a bio-medical system which the student himself will design.

6125 - BASIC ELECTRICITY 391 4 credits

Electron theory, Ohm's Law, series circuits, parallel circuits series-parallel circuits, network theorems, magnetism electromagnetic theory and introduction to A.C. Taught concurrently with 6117.

CIVIL ENGINEERING TECHNOLOGY

DEPT. 71

The Civil Engineering Technology program is designed to provide an engineering background for persons who wish to enter the building and construction industry as engineering technicians, architectural draftsmen, or as construction managers. Students completing this program should also be able to begin work in the areas of surveying and estimating. The design and construction of residential and light commercial structures are stressed. Certain phases of heavy construction and highway development are also covered.

Students planning to enter this program should have interests in mathematics and science. However, creative ability is also required in the design laboratories involved in this program.

Minimum Grade Requirement: All departmental courses shall be satisfactorily completed. A satisfactory grade shall be defined as one having a letter grade "D" (63 or 1.0 Q.P.A.) or above. Any course failed must be repeated before graduation and each course may be repeated only once. The student must achieve an overall Q.P.A. of 2.0 at the completion of the department course of study. In addition, he must remain in good academic standing as outlined below:

- A. At the beginning of the second semester, the student must maintain a 1.5 Q.P.A.
- B. At the beginning of the third semester, the student must maintain a 1.7 Q.P.A.
- C. At the beginning of the fourth semester, the student must maintain a 1.9 Q.P.A.

Any student not meeting the above academic requirements will be placed on academic probation for one semester. If at the end of this period no improvement has taken place to bring the Q.P.A. to the required academic level, the student will be removed from the program. Each student must complete Math Modules 2331 and 2332 before he or she will be allowed to enter into any of the 6000 series courses in the 2nd, 3rd or 4th semesters.

SEMESTER 1

| No. | Course Title | Class | Lab Credits |
|------|--------------------------------|-------|-------------|
| 1004 | English Composition 1 | 3 | 3 |
| 2334 | Mathematics 2331, 32, 33 | 3 | 3 |
| 3160 | Slide Rule Math | 1 | 1 |
| 5173 | Architectural Design & Spec. 1 | 2 | 3 |
| | Construction Materials | 3 | 3 |
| | Humanities Elective | 3 | 3 |
| | | 15 | 3 |
| | | | 16 |

SEMESTER 2

| No. | Course Title | Class | Lab Credits |
|------|-------------------------------------|-------|-------------|
| 1005 | Composition 2: Intro. to Literature | 3 | 3 |
| 3012 | Mathematics 2341, 42, 43, 44 | 4 | 4 |
| | Physics 1 | 3 | 3 |
| 3161 | Architectural Design & Spec. 2 | 2 | 3 |
| 5159 | Statics | 3 | 3 |
| | | 15 | 6 |
| | | | 17 |

SEMESTER 3

| No. | Course Title | Class | Lab Credits |
|------|---------------------------------|-------|-------------|
| 4014 | Economics 1 | 3 | 3 |
| 3092 | Surveying 1 | 2 | 6 |
| 5232 | Fortran for Scientists and Eng. | 3 | 3 |
| 5170 | Structures 1 | 3 | 3 |
| 5164 | Materials Testing Lab. | 1 | 2 |
| 5096 | Soils & Foundations | 3 | 3 |
| | | 15 | 8 |
| | | | 17 |

SEMESTER 4

| No. | Course Title | Class | Lab Credits |
|------|-------------------------------|-------|-------------|
| 1008 | Technical Report Writing | 3 | 3 |
| 5165 | Construction Methods & Equip. | 3 | 3 |
| 5163 | Construction Estimating | 2 | 3 |
| 5097 | Transportation 1 | 3 | 3 |
| 5177 | Construction Management | 3 | 3 |
| | | 14 | 6 |
| | | | 16 |

6058 - STRENGTH OF MATERIALS

3 credits

A study of forces and force systems and their applications to materials. Stress and strain produced by the application of forces on beams, columns, trusses and riveted and welded sections are studied for simple tension and shear. Laboratory experiments provide experience in measuring and calculating stresses produced for conditions of tension, compression, shear, bending and torsion.

6092 - SURVEYING 1

4 credits

The theory and practice of construction surveying. Field practice is given in the use of tape, transit and level and in data recording. Techniques of preparing working plans and maps from recorded data are developed making use of field notebooks. Two lecture hours and 6 lab hours.



| | | |
|---|-----------|---|
| 6093 - SURVEYING 721 | 3 credits | Two lecture hours and three laboratory hours. |
| A course teaching the basic surveying operations used in landscape work. The use of simple instruments such as tapes and hand levels is covered first, followed by study of transits and construction levels. Mapping and contour studies are carried out, and the use of surveying in typical landscape operations is stressed. | | |
| 6096 - SOILS AND FOUNDATIONS | 3 credits | |
| Analysis of subsoil conditions; bearing capacity and settlement analysis; character of natural soil deposits; earth pressure and retaining wall theory; stability of slopes and subgrades; foundation types and construction methods; and structural design of foundation elements. Three lecture hours. | | |
| 6097 - TRANSPORTATION 1 | 4 credits | |
| Problems in highway design and construction are covered including roadway foundations, material properties of flexible and rigid pavements, structural design of rigid and flexible pavements and pavement subgrade construction. In addition, railway layout and trackbed construction is covered. This course also makes a general survey of other modes of transportation, including mass transportation and air travel. Three lecture hours and three lab hours. | | |
| 6159 - STATICS | 3 credits | |
| A study of forces and force systems in equilibrium and their application to engineering materials. An analysis of the stresses and strains induced in various engineering materials and the corresponding behavioral changes in these materials. The application of forces on beams, columns, trusses and riveted and welded sections are studied in simple tension, compression, shear and bending. Preliminary beam and column design is also studied. Three lecture hours. | | |
| 6160 - ARCHITECTURAL DESIGN & SPECIFICATIONS 1 | 3 credits | |
| An introduction to architectural and construction-graphic techniques and written specifications. Emphasis is on residential and light commercial and industrial structures. Two class hours and three laboratory hours per week. | | |
| 6161 - ARCHITECTURAL DESIGN & SPECIFICATIONS 2 | 3 credits | |
| A continuation of 6160 with additional emphasis on mechanical and electrical drawings and specifications. Two class hours and three laboratory hours per week. PREREQUISITE: 6160. | | |
| 6163 - CONSTRUCTION ESTIMATING | 3 credits | |
| An introduction to estimating and construction office practice to familiarize the student with the construction process as a whole; the ways in which contractors organize their offices to accomplish jobs in construction; the generation of plans and specifications and their use, systems of accounting; and how material quantity "take-off" forms the basis for accounting. | | |
| 6164 - MATERIALS TESTING LAB | 1 credit | |
| Classroom theory of soil mechanics and strength of materials expanded through material testing experiments using laboratory equipment. In addition, field trips to major construction sites enable students to see current construction practices and techniques. Three laboratory hours. | | |
| 6165 - CONSTRUCTION METHODS & EQUIPMENT | 3 credits | |
| An introductory study of methods to determine quantities of materials, equipment, labor and money required for construction projects. It includes characteristics and capabilities of work equipment; methods of obtaining unit costs of in-place construction; and field reporting practices and responsibilities of field inspection. Three lecture hours. | | |
| 6170 - STRUCTURES 1 | 3 credits | |
| A continuation of the stress and force theories from Statics (6159) is presented as they apply to structural design. The design of structural steel floor, beam and column system including indeterminate structures is studied in depth, with particular emphasis placed upon the shearing, bending and deflection stresses induced on wood, steel, aluminum and concrete load carrying members. The second half of the course is devoted to reinforced concrete beam and floor system design, using the ultimate-strength method for the design of reinforced concrete beams, columns, foundations and retaining walls as permitted by the ACI Code. Three lecture hours. PREREQUISITE: Statics (6159). | | |
| 6173 - CONSTRUCTION MATERIALS | 3 credits | |
| An introduction to the materials used in the construction industry. Emphasis is placed on their physical properties, methods of production and their construction applications. Materials covered include wood, steel, aluminum, alloys, glass, concrete, plastics, rubber, and others. Three lecture hours. | | |
| 6177 - CONSTRUCTION MANAGEMENT | 3 credits | |
| A study of specialized business and management topics which are of particular interest to the construction industry. Topics include basic operational patterns, subcontracting procedures, purchasing and expediting, scheduling, change order accounting for material and supplies, field labor methods, critical path method and legal matters. Three lecture hours. | | |
| 6232 - FORTRAN FOR SCIENTISTS & ENGINEERS | 3 credits | |
| This course is designed to offer an introduction to the computer language Fortran. The content of the course will include a brief introduction to the general theory of digital computers as well as Fortran programming. Fortran will be studied as an example of a computer language. Special attention will be placed upon using Fortran as a powerful tool in solving a number of diverse problems drawn from science and engineering. PREREQUISITES: Math (2311-13) | | |

ELECTRICAL TECHNOLOGY

DEPT. 31

The Electrical Technology program prepares students for work in the development, installation and maintenance of industrial automated systems or related instrumentation applications. Graduates of the program have also been successful as field representatives for manufacturers in the areas of product application and sales.

Students planning to enter this field should have a desire for achievement and involvement in mathematics, science and technology.

Minimum Grade Requirement: All 6000 series Electrical technology courses must be successfully completed with a grade of "D" or better for graduation. These Electrical technology courses must be taken in a sequential order. That is, second semester courses cannot be taken until the first semester prerequisite courses are successfully completed as outlined in the Electrical Technology program. Before starting the third semester, the student must have successfully completed the Mathematics Modules 2341-44.

SEMESTER 1

| Io. | Course Title | Class | Lab Credits |
|-----|---------------------------------|-------|-------------|
| 018 | Fundamentals of Electricity 311 | 3 | 3 4 |
| 071 | Engineering Graphics 311 | 3 | 3 |
| 004 | *Mathematics 2331, 32, 33 | 3 | 3 |
| 334 | English Composition 1 | 3 | 3 |
| 073 | Slide Rule Math | 1 | 1 |
| | Human Relations at Work 3 | 3 | 3 |
| | | 16 | 3 17 |

SEMESTER 2

| Io. | Course Title | Class | Lab Credits |
|-----|-------------------------------------|-------|-------------|
| 025 | A.C. Fundamentals | 3 | 3 4 |
| 023 | Fundamentals of Electronics 311 | 4 | 4 |
| 005 | *Mathematics 2341, 42, 43, 44 | 4 | 4 |
| 093 | Composition 2: Intro. to Literature | 3 | 3 |
| | Industrial Psychology | 3 | 3 |
| | | 17 | 3 18 |

SEMESTER 3

| Io. | Course Title | Class | Lab Credits |
|-----|--------------------------------|-------|-------------|
| 028 | D.C. Industrial Applications | 2 | 3 3 |
| 030 | Industrial Electronic Circuits | 2 | 3 3 |
| 033 | Semiconductors/Transistors 1 | 2 | 3 3 |
| 027 | Computer Concepts & Logic Cir. | 3 | 3 |
| 012 | Physics 1 | 3 | 3 4 |
| | | 12 | 12 16 |

SEMESTER 4

| Io. | Course Title | Class | Lab Credits |
|-----|---------------------------------|-------|-------------|
| 031 | Industrial Electro-Mech. Syst. | 2 | 3 3 |
| 026 | Fundamentals of Instrumentation | 2 | 3 3 |
| 034 | Semiconductors/Transistors 2 | 2 | 2 3 |
| 007 | Fundamentals of Speech | 3 | 3 |
| 008 | Technical Report Writing | 3 | 3 |
| 032 | Electro-Mech. Circuit Design | 1 | 2 2 |
| | | 13 | 10 17 |

Note: Math courses 2331, 2332, 2333, 2334, 2341, 2342, 2343 and 344 MUST be completed and passed by September start of third (3) semester.

6018 - FUNDAMENTALS OF ELECTRICITY 311 4 credits
A course dealing with the basic theories and concepts essential to a practical understanding of all phases of electricity and electronics. It treats fully the nature of electricity and magnetism, including an exposition of the electron theory as it relates to electricity. Consideration is given to Ohm's Law, and associated circuits, batteries, induced E.M.F., magnetic circuits, D.C. measuring instruments, motors and generators.

6023 - FUNDAMENTALS OF ELECTRONICS 311 4 credits
The principles and properties of solid state devices are discussed in detail. Accompanying demonstration time is given for the student to observe construction methods, device

operation and other solid state reaction phenomenon.

6025 - A.C. FUNDAMENTALS

4 credits

Understanding of the basic electrical and electronic principles of D.C. circuits is extended to include the more complex area of A.C. circuits. Generation, vector representation and algebraic manipulation of the sine wave, inductance, capacitance, resonance and Ohm's Law for alternating current circuits are studied. Practical methods of measuring inductance, capacitance and impedance are discussed together with A.C. and D.C. bridge circuits. Included also are the rudiments of complex-wave formation and analysis. In the laboratory, the student will perform experiments confirming theory and will be given experience and training in the repair of A.C. equipment.

6026 - FUNDAMENTALS OF INSTRUMENTATION

3 credits

The student is introduced to the types of measuring means and their function, theory of operation, practical construction and use. Instrumentation terminology, and measuring devices for pressure, temperature, flow level, and analysis are studied. Experiments are performed in the laboratory.
PREREQUISITES: 6018, 6023 and 6025.

6027 - COMPUTER CONCEPTS & LOGIC CIRCUITS

3 credits

This course is an introduction to the concepts of computer operation. Coverage includes: computer programming, computer mathematics, Boolean algebra and logic circuitry. The aim of the course is to present the necessary information essential to the understanding of digital computers and numeric control systems. **PREREQUISITE:** Senior Standing.

6028 - D.C. INDUSTRIAL APPLICATIONS

3 credits

Electrical and magnetic circuits are studied as they apply to the construction, principles of operation and performance characteristics of direct current apparatus. Laboratory and lecture are combined in the study of the shunt and compound motors. The course also includes the study of auxiliary apparatus needed to start, stop and control D.C. motors and generators. **PREREQUISITES:** 6018, 6023 and 6025.

6030 - INDUSTRIAL ELECTRONIC CIRCUITS

3 credits

This course deals with the fundamental circuits and components most frequently found in industrial electronic equipment. The basic circuit of a complete electronic control system and the characteristics of the component parts of each circuit are studied. Emphasis is placed on the characteristics of the phanatron, thyratron, ignitron, solid state devices and sensing elements. Parts of the course deal with vacuum-tube amplifiers, oscillators and saturable reactors. The laboratory section of the course is designed to verify by means of experiments the characteristics of the components and circuits used in industrial electronics. It is intended to develop an understanding of those circuit construction practices and testing techniques common to the field. **PREREQUISITES:** 6018, 6023 and 6025.

6031 - INDUSTRIAL ELECTROMECHANICAL SYSTEMS

3 credits



Class and laboratory work in basic pneumatic, hydraulic and mechanical systems which make use of previously acquired understanding of electrical and electronic techniques. The application to automated equipment and systems is stressed.
PREREQUISITES: 6028, 6030 and 6023.

6032 - ELECTROMECHANICAL CIRCUIT DESIGN

2 credits

The design and application to industrial electromechanical systems of electrical circuitry using solid state devices, integrated circuits, memory storage and electronics.
PREREQUISITES: 6018, 6023 and 6025.

6033 - SEMICONDUCTORS & TRANSISTORS 1 3 credits
The principles and electrical properties of semiconductor diodes and transistors are studied. Special emphasis is placed upon the uses of semiconductor devices in rectifiers, amplifiers, oscillators and special circuits.

The accompanying laboratory work enables the student to measure the properties of these devices and to verify their operating principles and uses in actual circuits.
PREREQUISITES: 6018, 6023 and 6025.

6034 - SEMICONDUCTORS & TRANSISTORS 2 3 credits
A study of the circuitry and design of semiconductor devices commonly used in industry. Among the topics covered are servo controls, switching networks, regular circuits and special amplifiers. The nature and basic design of these circuits are analyzed using the latest components available.
PREREQUISITES: 6018, 6023, 6025 and 6033.

6071 - ENGINEERING GRAPHICS 311

3 cred

This course prepares a person to take a component part and present it in accordance with graphic language. This part must then be utilized with other parts graphically. All research necessary for the parts hardware and software must be included. The student's concurrent electrical knowledge utilized in graphic and symbolic form for electrical circuit and construction techniques. This is carried on to the degree that as he establishes his future electrical knowledge, he can easily implement his graphic knowledge expansion. Standards of the industry are introduced continuously at the appropriate time for different phases of the art.

CE6261 - FUNDAMENTALS OF POWER CIRCUITS

3 credits

The classes will be geared to the discussion of power circuits at the primary feeder level and should be of interest to industrial plant personnel although it will also be geared to utility people. Fundamentals of power feeder calculations will be covered and will include power, power factor and power factor correction problem solving. Equipment to be studied will include generators, power transformers, potential and current transformers, power circuit breakers and relays. Typical power feeders will be described combining the equipments.

CE before a course number indicates: Continuing Education (offered currently only in the Evening Division).

ELECTRO-MECHANICAL TECHNOLOGY

DEPT. 37

Electro-Mechanical Technicians are becoming increasingly important in a variety of industries. Various functions performed might include: Customer or Product Service; Product Design and Testing; Building and Evaluating Test Equipment; Building and Testing Prototypes; Production Equipment Installation; Quality Control and Assurance; Test Equipment Maintenance; Production Equipment Maintenance; Product Engineering and Operation of Research Equipment.

The advantage to the student in this program is a training in both the electronic and the mechanical fields.

Minimum Grade Requirement: Students must receive a grade of "D" or better. A Q.P.A. of 2.0 must be achieved for graduation.

SEMESTER 1

| No. | Course Title | Class | Lab | Credits |
|------|----------------------------|-------|-----|---------|
| 1004 | English Composition 1 | 3 | | 3 |
| 1007 | Fundamentals of Speech | 3 | | 3 |
| | Math 2331, 32, 33 | 3 | | 3 |
| 2334 | Slide Rule Math | 1 | | 1 |
| 4073 | Human Relations at Work 3 | 3 | | 3 |
| 6046 | Electro-Mechanical Systems | 3 | 3 | 4 |
| 6262 | Engineering Graphics 371 | | 3 | 1 |
| | | 16 | 6 | 18 |

SEMESTER 2

| No. | Course Title | Class | Lab | Credits |
|------|------------------------------------|-------|-----|---------|
| 1005 | Composition 2: Intro. to Lit. | 3 | | 3 |
| | Math 2341, 42, 43, | 3 | | 3 |
| 3012 | Physics 1 | 3 | 3 | 4 |
| 6132 | Control System Theory | 3 | 3 | 4 |
| 6263 | Engineering Graphics 372 | | 3 | 1 |
| | Elective Humanities or Social Sci. | 3 | | 3 |
| | | 15 | 9 | 18 |

SEMESTER 3

| No. | Course Title | Class | Lab | Credits |
|------|------------------------------------|-------|-----|---------|
| 2015 | Statistics and Quality Control | 3 | | 3 |
| 6032 | Electro Mech. Crt. Design | 1 | 2 | 2 |
| 6150 | Fluid Power | 3 | | 3 |
| 6064 | Industrial Materials | 3 | | 3 |
| 6219 | Systems Analysis 1 | 4 | | 4 |
| | Elective Humanities or Social Sci. | 3 | | 3 |
| | | 17 | 2 | 18 |

SEMESTER 4

| No. | Course Title | Class | Lab | Credits |
|------|----------------------------------|-------|-----|---------|
| 4086 | General Psychology | 3 | | 3 |
| 6026 | Fundamentals of Instrumentation | 2 | 3 | 3 |
| 6031 | Industrial Electro-Mech. Systems | 2 | 3 | 3 |
| 6051 | Electronics Workshop | | 4 | 2 |
| 6061 | Production Control | 4 | | 4 |
| 6220 | Systems Analysis 2 | 4 | | 4 |
| | | 15 | 10 | 19 |

6262 - ENGINEERING GRAPHICS 371

1 credit

An introduction spatial, architecture and machine drawing requirements is provided. These will principally be applied to working drawings, detail drawings, structural shapes and frames. Military specifications and other standards are introduced.

6263 - ENGINEERING GRAPHICS 372

1 credit

This phase of drawing deals with systems drawing, machine layout, schematics and functional assembly drawings.

6046 - ELECTRO-MECHANICAL SYSTEMS

4 credits

An introduction to devices where both electrical and mechanical principles are utilized. The use of drawings, schematics, hand tools and common shop equipment forms an important part of the course. Electro-mechanical components included are switches, relays, solenoids, motors, generators and actuators. Electro-magnetic principles and circuits and their application to component operation is the central theme.

6132 - CONTROL SYSTEM THEORY

4 credits

The control of relays, solenoids, contactors and motors. Modern solid state control devices such as silicon control rectifiers, unijunction transistors, diacs and triacs are used to illustrate the principles of control as they are applied to electro-mechanical devices.

The control of levels, rates and position through the use of electro-mechanical, hydraulic, pneumatic, mechanical, electrical and electronic devices. Topics include voltage regulators, synchros, amplifiers, open and close-loop systems, differential controls, integral controls, stability and response time.

6219 - SYSTEM ANALYSIS

4 credits

Physical characteristics and mathematical models of system elements; techniques for writing and solving system dynamic equations.

Concepts relating to transfer functions; digital and analog solutions of system equations, time and frequency domain analysis techniques and stability.

6220 - SYSTEM ANALYSIS

4 credits

Complete synthesis and design problems are solved, showing how system theory is used to design a system to meet certain specifications, and also showing the relationship between the system model and the real system as an interconnected collection of hardware.

6031 - INDUSTRIAL ELECTRO-MECHANICAL SYSTEMS

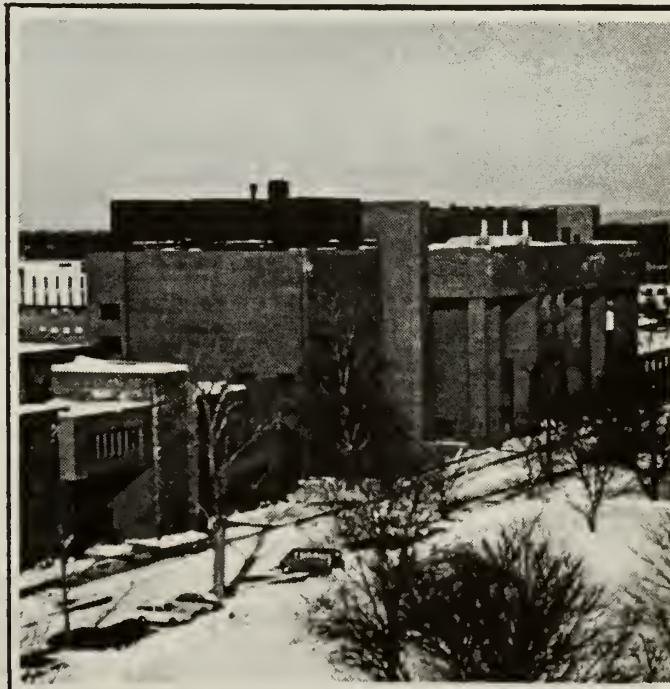
3 credits

Class and laboratory work in basic pneumatic, hydraulic and mechanical systems which make use of previously acquired understanding of electrical and mechanical techniques. The application to automated equipment and systems is stressed.

6032 - ELECTRO-MECHANICAL CIRCUIT DESIGN

2 credits

The design and application to industrial electromechanical systems of electrical circuitry using solid state devices, integrated circuits, memory storage and electrons.



ELECTRONIC BENCHWORK TECHNOLOGY

DEPT. 69

SEMESTER 1

| No. | Course Title | Class | Lab Credits |
|------|---------------------------|-------|-------------|
| 1004 | English Comp. 1 | 3 | 3 |
| | Mathematics 2321, 22, 23* | 3 | 3 |
| 2334 | Sliderule | 1 | 1 |
| 4073 | Human Rel. at Work | 3 | 3 |
| 6019 | Basic Electronics 1 | 3 | 3 |
| 6178 | Electronics Lab 1 | 4 | 2 |
| 6239 | Graphics for Elec. Tech. | 1 | 2 |
| | | 14 | 6 17 |

SEMESTER 2

| No. | Course Title | Class | Lab Credits |
|------|-----------------------------|-------|-------------|
| 1005 | English Comp/Intro. to Lit. | 3 | 3 |
| | Mathematics 2331, 32, 33* | 3 | 3 |
| 6024 | Basic Electronics 2 | 3 | 3 |
| 6035 | Semiconductor Circuits 1 | 3 | 3 |
| 6179 | * Electronics Lab 2 | 4 | 2 |
| | | 12 | 4 14 |

SEMESTER 3

| No. | Course Title | Class | Lab Credits |
|------|------------------------------|-------|-------------|
| 1008 | Tech. Report Writing | 3 | 3 |
| 6036 | * Electronic Instru. | 4 | 2 |
| 6273 | Electronic Circuitry | 3 | 3 |
| 6287 | * Electronic Troubleshoot. 1 | 2 | 4 3 |
| 6213 | Comm. Systems 1 | 3 | 3 |
| 5029 | Small Bus. Mgt. | 3 | 3 |
| | | 14 | 8 17 |

SEMESTER 4

| No. | Course Title | Class | Lab Credits |
|------|------------------------------|-------|-------------|
| 3012 | * Physics | 3 | 3 4 |
| 6286 | * Elect. Const. Techniques | 4 | 2 |
| 6289 | * Electronic Troubleshoot. 2 | 2 | 4 3 |
| 1007 | Fund. of Speech | 3 | 3 |
| 6225 | * Electronic Licenses | 2 | 1 3 |
| | | 10 | 12 15 |

* Note: All Math courses 2321 through 2333 must be completed and passed by September start of (3) third semester.

6019 - BASIC ELECTRONICS 1

3 credits

This course is an introduction to the fundamental concepts of electronics. Coverage includes: concepts of electricity, series and parallel circuits, network theorems and laws and metering principles. The purpose of this course is to present the necessary concepts and ideas which will be needed in more advanced course work about specific electronic systems. Emphasis is placed on the analysis of direct current networks. Specifically, the calculation of such circuit parameters as current, voltage and power for various network configurations.

6024 - BASIC ELECTRONICS 2

3 credits

The fundamental concepts of alternating current circuits are presented. Starting with a review of direct current theorems and laws, the concepts of alternating currents are introduced using phasor analysis. Some topics covered include: capacitive and inductive reactance, transients, time constants, power and power factor, the j-operator, resonant circuits, circuit Q and bandwidth, filters and switching circuits. PREREQUISITES: 6019 Corequisites: 6179 and 2331-34.

6035 - SEMICONDUCTOR CIRCUITS 1

3 credits

This course is an introduction to the theory of solid-state semiconductor devices. Topics considered in the course include: semiconductor physics, the pn junction diode, tunnel and zener diodes and bipolar transistors. The I V characteristics of these various devices are studied and analyzed, idealized models are considered, circuit biasing techniques are discussed and a comparison of the different transistor circuit configurations is undertaken. PREREQUISITES: 6019 Corequisites: 6179 and 2331-34

6036 - ELECTRONIC INSTRUMENTATION

2 credit

This course is an introduction to the theory of operation and the application of modern electronic measurement equipment. Topics covered include: oscilloscopes, electronic voltmeters, digital instruments, signal generators, sweep generators, repair test equipment, recorders, transducers and data acquisition equipment. PREREQUISITES: Senior Standing.

6178 - ELECTRONICS LAB 1

2 credit

This course is the first in a sequence of four courses designed to give the student practical experience with electronic components, measuring instruments and equipment. The emphasis in the laboratory work is on the verification of theory studied in Basic Electronics 1 about direct current networks. Equal emphasis is placed on the familiarization of the student with electronic metering principles, electronic testing procedures and the use of various electronic components commonly found in the electronics industry. PREREQUISITE: None.

6179 - ELECTRONICS LAB 2

2 credits

A continuation of Electronics Lab 1, the emphasis in this course is again placed on practical experience. The student receives continued exposure to electronic components, test equipment and circuitry. Now the laboratory work is concerned with the verification of theory studied in the student's course work on passive networks and active solid-state devices. The student gains experience in the setting up and testing of useful electronic circuits and systems. PREREQUISITES: 6178 with a "C minus" or better.

6213 - COMMUNICATIONS SYSTEMS 1

3 credits

The aim of this course is to present information about the circuit processes, and basic theories essential to the understanding of communications systems. Topics included in the course are noise limitations, filter theory, amplitude modulation, frequency modulation, single-sideband modulation, radio receivers and pulse modulation schemes. How these systems are used to transmit different information forms such as audio or video or data signals is studied in detail. PREREQUISITES: Senior Standing.

6225 - ELECTRONIC LICENSES

3 credits

This course is an introduction to the fields of radio and television broadcasting. A general survey of the media including history, government control and regulations, present and future trends and career opportunities is undertaken. Intensive drill on topics in both radio law and theory is done in preparation for the Federal Communications Commission license examinations. PREREQUISITES: Senior Standing and 6213.

6273 - ELECTRONIC CIRCUITRY

3 credits

This course is an introduction to electronic circuitry that is peculiar to home-entertainment equipment. Basic "building block" circuits will be considered. Coverage includes: rectifiers, voltage regulators, oscillators, amplifiers, detectors and feedback circuits. Emphasis will be placed on circuitry utilized in amplifier, radio and television equipment. PREREQUISITES: Senior Standing.

6286 - ELECTRONIC CONSTRUCTION TECHNIQUES

2 credits

This course is an introduction to electronic construction practices. Printed circuit board theory and layout, heat sinking techniques, soldering techniques, chassis layout, electronic tools and machining principles and numerous other topics are considered and examined.

6287 - ELECTRONIC TROUBLESHOOTING 1 3 credits

This is the first course in a sequence of two which is designed to give the student practical troubleshooting experience. The course consists of a lecture portion and a laboratory section. Topics covered in the lecture will be directly related to the laboratory work and will consist of material on home entertainment equipment primarily. The laboratory section

will be concerned with giving students practical experience with electronic troubleshooting techniques. The course emphasis will be on electronic audio and radio equipment troubleshooting methods.

6289 - ELECTRONIC TROUBLESHOOTING 2 3 credits

A continuation of Electronic Troubleshooting 1, this course shifts its emphasis to monochromic and color television systems. Again, the lecture portion of the course covers the necessary theory and the laboratory section gives the student practical troubleshooting experience. The theory of monochromic television receivers is covered in detail using signal tracing techniques. Color television operation is discussed extensively and alignment and repair methods explored and attempted in the laboratory. PREREQUISITE: 6287.



ELECTRONIC TECHNOLOGY

DEPT. 32

The Electronic Technology program is organized to present learning activities that will qualify the graduate to perform job functions in areas such as communications, control systems, computers, circuit design and systems testing. Training for a wide range of jobs is provided by a two-year technical program of specialized, intensive instruction designed to fit individuals for useful employment as highly skilled technicians in the electronics field.

Minimum Grade Requirement: Students in Electronic Technology and Electronic Benchwork Technology must receive a grade of "D" or better. A Q.P.A. of 2.0 must be achieved for graduation.

SEMESTER 1

| No. | Course Title | Class | Lab Credits |
|------|---------------------------|-------|-------------|
| 1004 | English Comp. 1 | 3 | 3 |
| | Mathematics 2331, 32, 33* | 3 | 3 |
| 2334 | Sliderule Mathematics | 1 | 1 |
| 4073 | Human Rel. at Work | 3 | 3 |
| 6019 | Basic Electronics 1 | 3 | 3 |
| 6178 | Electronics Lab 1 | 4 | 2 |
| 6239 | Graphics for Elect. Tech. | 1 | 2 |
| | | 14 | 6 |
| | | | 17 |

SEMESTER 2

| No. | Course Title | Class | Lab Credits |
|------|---------------------------|-------|-------------|
| 1005 | English Comp. 2 | 3 | 3 |
| | Mathematics 2341, 42, 43* | 3 | 3 |
| 6024 | Basic Electronics 2 | 3 | 3 |
| 6035 | Semiconductor Circuits 1 | 3 | 3 |
| 6179 | Electronics Lab 2 | 4 | 2 |
| 2344 | Technical Calculus | 1 | 1 |
| | | 13 | 4 |
| | | | 15 |

SEMESTER 3

| No. | Course Title | Class | Lab Credits |
|------|-----------------------------------|-------|-------------|
| 1008 | Technical Report Writing | 3 | 3 |
| 6027 | Computer Concepts & Logic Cir. | 3 | 3 |
| 6037 | Fund. of Pulse & Digital Circuits | 3 | 3 |
| 6213 | Comm. Systems 1 | 3 | 3 |
| 6212 | Semicond. Circuits 2 | 3 | 3 |
| 6180 | Electronics Lab 3 | 4 | 2 |
| | | 15 | 4 |
| | | | 17 |

SEMESTER 4

| No. | Course Title | Class | Lab Credits |
|------|-----------------------------------|-------|-------------|
| 3012 | Physics | 3 | 3 |
| 6029 | Fund. of Digital Computer Systems | 3 | 3 |
| 6038 | Comm. Systems 2 | 3 | 3 |
| 6039 | Integrated Electronics | 3 | 3 |
| 6181 | Electronics Lab 4 | 4 | 2 |
| 6225 | Electronic Licenses | 2 | 1 |
| | | 14 | 8 |
| | | | 18 |

* Note: All Math courses from 2331 through 2344 must be completed and passed by start of semester 3.

6019 - BASIC ELECTRONICS 1

3 credits

This course is an introduction to the fundamental concepts of electronics. Coverage includes: concepts of electricity, series and parallel circuits, network theorems and laws and metering principles. The purpose of this course is to present the necessary concepts and ideas which will be needed in more advanced course work about specific electronic systems. Emphasis is placed on the analysis of direct current networks. Specifically, the calculation of such circuit parameters as current, voltage and power for various network configurations.

6024 - BASIC ELECTRONICS 2

3 credits

The fundamental concepts of alternating current circuits are presented. Starting with a review of direct current theorems and laws, the concepts of alternating currents are introduced using phasor analysis. Some topics covered include: capacitive

and inductive reactance, transients, time constants, power and power factor, the j-operator, resonant circuits, circuit Q and bandwidth, filters and switching circuits. **PREREQUISITES:** 6019 Corequisites: 6179 and 2331-34.

6027 - COMPUTER CONCEPTS & LOGIC CIRCUITS

3 credits

This course is an introduction to the concepts of computer operation. Coverage includes: computer programming, computer mathematics, Boolean algebra and logic circuitry. The aim of the course is to present the necessary information essential to the understanding of digital computers and numeric control systems. **PREREQUISITE:** Senior Standing.

6029 - DIGITAL COMPUTER SYSTEMS

3 credits

This course is an introduction to the operation of digital computer systems. Coverage includes: computer arithmetic, logic unit operation, the operation and organization of computer memory, the operation of input-output devices, computer timing and computer control. The aim of the course is to present the information essential to the understanding of the operation of digital computers and how they interface with the world we live in so as to be useful for business, scientific and industrial applications. **PREREQUISITES:** Senior Standing and 6027.

6035 - SEMICONDUCTOR CIRCUITS 1

3 credits

This course is an introduction to the theory of solid-state semiconductor devices. Topics considered in the course include: semiconductor physics, the pn junction diode, tunnel and zener diodes and bipolar transistors. The I-V characteristics of these various devices are studied and analyzed, idealized models are considered, circuit biasing techniques are discussed and a comparison of the different transistor circuit and configurations is undertaken. **PREREQUISITES:** 6019, Corequisites: 6179 and 2331-34

6037 - PULSE AND DIGITAL CIRCUITS

3 credits

The fundamentals applying to nonsinusoidal pulse, timing and switching circuits are presented. The theory is demonstrated by actual measurement and observation and the circuits are analyzed mathematically in detail. Some of the topics covered include: the application of circuit theorems, waveform analysis, integration and differentiation circuits, semiconductors as switches, multivibrators, sawtooth generators and gating and delay circuits. **Prerequisites:** Senior Standing.

6038 - COMMUNICATIONS SYSTEMS 2

3 credits

A continuation of Communications Systems 1. The aim of this course is to present the theory behind the operation of more sophisticated electronic communications systems. Topics included in the course are stereo FM and SCA systems, both monochromic and color television, transmission lines, antennas and microwave systems. The operation and theory of microwave systems is covered in detail with emphasis given to X-band waveguide devices and components. **PREREQUISITES:** Senior Standing and 6213.

6039 - INTEGRATED ELECTRONICS

3 credits

The aim of this course is to present information relative to the theory behind the operation of the "fundamental building blocks" of both analog and digital electronic systems. Topics included in the course are a review of bipolar and field-effect

transistor theory, amplifier circuits, active filters, power supply circuits, operational amplifiers, integrated circuit theory, crystal and feedback oscillators and voltage regulators. This course brings together the theory of semiconductor devices and their applications as useful electronic systems elements. PREREQUISITES: Senior Standing.

6178 - ELECTRONICS LAB 1 2 credits

This course is the first in a sequence of four courses designed to give the student practical experience with electronic components, measuring instruments and equipment. The emphasis in the laboratory work is on the verification of theory studied in Basic Electronics 1 about direct current networks. Equal emphasis is placed on the familiarization of the student with electronic metering principles, electronic testing procedures and the use of various electronic components commonly found in the electronics industry. PREREQUISITES: None.

6179 - ELECTRONICS LAB 2 2 credits

A continuation of Electronics Lab 1, the emphasis in this course is again placed on practical experience. The student receives continued exposure to electronic components, test equipment and circuitry. Now the laboratory work is concerned with the verification of theory studied in the student's course work on passive networks and active solid-state devices. The student gains experience in the setting up and testing of useful electronic circuits and systems. PREREQUISITES: 6178 with a "C minus" or better.

6180 - ELECTRONICS LAB 3 2 credits

This course is a continuation of the laboratory experience for students involved in the Electronics Technology curriculum. However, now the emphasis is on material covered in the senior year. The theory learned in the course work is tested in the laboratory by observations of circuits and systems pertinent to those courses. Besides the reinforcement of concepts and ideas germane to the electronics curriculum, the student's proficiency with electronic equipment and test devices is improved and familiarity with practical electronics applications enhanced. PREREQUISITES: 6179 with a "C minus" or better and Senior Standing.

6181 - ELECTRONICS LAB 4 2 credits

This course is a continuation of Electronics Lab 3. The course is now concerned with the theory studied in the fourth semester of the electronics curriculum. Again, theoretical concepts are reinforced and practical ability enhanced. PREREQUISITES: 6180 with a "C minus" or better and Senior Standing.

6212 - SEMICONDUCTOR CIRCUITS 2 3 credits

This course is a continuation of Semiconductor Circuits 1. The emphasis is now on the use of semiconductor devices as useful active circuit elements. Topics include: amplifiers, cascaded stages, frequency and gain limitations, feedback principles, temperature effects and h-parameters. Considered also, are field-effect transistors and other special semiconductor devices. PREREQUISITES: Senior Standing and 6035.

6213 - COMMUNICATIONS SYSTEMS 1 3 credits

The aim of this course is to present information about the circuit processes and basic theories essential to the understanding of communications systems. Topics included in the course are noise limitations, filter theory, amplitude modulation, frequency modulation, single-sideband modulation, radio receivers and pulse modulation schemes. How these systems are used to transmit different information forms such as audio or video or data signals is studied in detail. PREREQUISITE: Senior Standing.

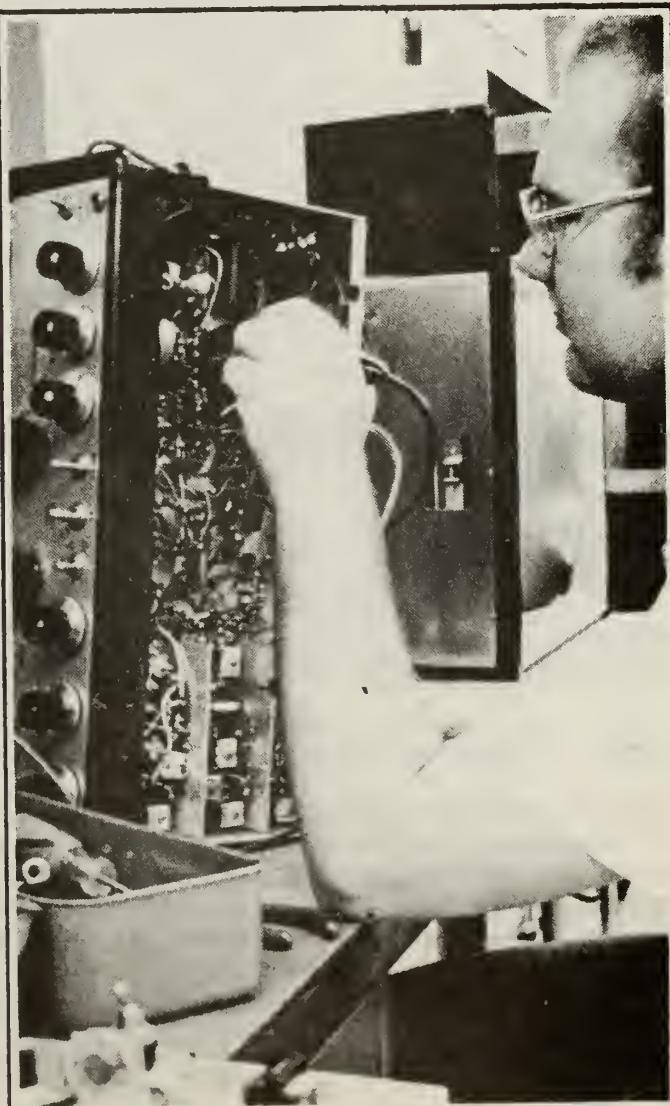
6225 - ELECTRONIC LICENSES 3 credits

This course is an introduction to the fields of radio and television broadcasting. A general survey of the media including history, government control and regulations, present and future trends and career opportunities is undertaken. Intensive drill on topics in both radio law and theory is done in preparation for the Federal Communications Commission license examinations. PREREQUISITES: Senior Standing and 6213.

6239 - GRAPHICS FOR ELECTRONIC TECHNOLOGY

2 credits

This course emphasizes drafting form, geometric construction, orthographic projection, dimensioning and views. The latter portion includes electronic symbols, circuit diagrams, wiring schematics and chassis layouts.



ENVIRONMENTAL TECHNOLOGY

DEPT. 83

The Department of Environmental Technology offers air quality technology combined with wastewater treatment technology. The Associate in Science Degree may be earned in any one option in two years.

The program is oriented toward environmental engineering with the objective of training para-professionals who can assist the engineer in detecting and measuring pollution, and installing control facilities, or who can operate purification facilities. The graduates will find employment in governmental agencies, industrial facilities, engineering firms, municipal engineering offices, waste treatment plants and related facilities.

The course of study is specifically designed for those students who are interested in the aspects of pollution control. It is definitely career-oriented and full credit generally will not be transferable to a four-year college. Students desiring to enter the program must have had one year of chemistry plus two years of algebra or its equivalent. Those who do not have this background may enroll but they must expect to attend one additional year or two summer sessions to make up their deficiencies.

The students will be trained in both the theory and its application and will receive hands-on instruction on many items of commercial equipment.

Minimum Grade Requirement: The minimum passing grade for any individual course in the Environmental Technology Department shall be a "D" (60). The minimum average for graduation from the department shall be a letter grade of "C".

SEMESTER 1

| No. | Course Title | Class | Lab | Credits |
|------|--------------------------|-------|-----|---------|
| 2334 | Mathematics 2331, 32, 33 | 3 | | 3 |
| 3109 | Slide Rule Math | 1 | | 1 |
| 1004 | Chemistry | 3 | 3 | 4 |
| 6191 | English Composition | 3 | | 3 |
| 6186 | Process Problems 1 | 3 | 3 | 4 |
| | Environmental Studies | 3 | | 3 |
| | | 16 | 6 | 18 |

SEMESTER 2

| No. | Course Title | Class | Lab | Credits |
|------|--|-------|-----|---------|
| 3088 | Environmental Microbiology | 2 | 3 | 3 |
| 4073 | Human Relations at Work | 3 | | 3 |
| 3110 | Chemistry | 3 | 3 | 4 |
| 3012 | Physics | 3 | 3 | 4 |
| 6192 | Treatment Plant Oper. 1 | 2 | 3 | 3 |
| | Practicum (summer) 1 week in May-4 wks in June | 13 | 12 | 17 |
| | | | | 3 |

SEMESTER 3

| No. | Course Title | Class | Lab | Credits |
|------|-----------------------------------|-------|-----|---------|
| 6234 | Instrumentation | 3 | | 3 |
| 6201 | Industrial Health and Safety | 3 | | 3 |
| 4014 | Economics | 3 | | 3 |
| 6328 | Treatment Plant Oper. 2 | 2 | 3 | 3 |
| 6197 | Air & Water Quality Control Proc. | 2 | 3 | 3 |
| | | 13 | 6 | 15 |

SEMESTER 4

| No. | Course Title | Class | Lab | Credits |
|------|-------------------------------|-------|-----|---------|
| 6190 | Systems Maintenance | 2 | 3 | 3 |
| 6183 | Wastewater Sample and Proc. | 2 | 3 | 3 |
| 6200 | Air & Water Sample & Analysis | 3 | | 3 |
| 1008 | Technical Report Writing | 3 | | 3 |
| | Elective | 3 | | 3 |
| | | 13 | 6 | 15 |

6183 - WASTEWATER SAMPLE AND PROCESS 3 credits

An investigation of the chemistry of domestic and industrial liquid wastes, their effects upon wastewater treatment plants and processes and the test procedures and techniques required for treatment plant operation. It includes such topics as collection and preservation of samples, acidity and alkalinity, color, odor, turbidity, hardness, mineral content, chlorination, dissolved oxygen (DO), biochemical oxygen demand (BOD), chemical oxygen demand (COD), greases, volatile acids, toxic metals and suspended matter.

6186 - ENVIRONMENTAL STUDIES 3 credits

An introduction to environmental pollution, its effect on man and other living things and the basic principles of sanitation, treatment and control. It includes a discussion of the major pollutants of air, water and land; sewage and industrial waste composition; disease transmittal; control methods and air and water quality standards.

6190 - SYSTEMS OPERATIONS & MAINTENANCE 3 credit

A study of wastewater treatment plant equipment with emphasis on diagnosis and repair and preventive maintenance programs. Topics include tanks, piping systems, valves, pumps, motors, controls, instruments, screens, filters, mixers, chlorinators, centrifuges and incinerators. Maintenance planning, scheduling and record keeping is emphasized.
PREREQUISITE: 6191.

6191 - PROCESS PROBLEMS 1 4 credits

An introduction to the analytical approach to problem solution and a familiarization with various calculation aids. It will include turning word problems into equations, problem solving, exponential quantities, graphing and chemical stoichiometry.

6192 - TREATMENT PLANT UNIT OPERATIONS 1 3 credits

An investigation of the physical and chemical processes utilized in the treatment of liquid wastes. It includes such topics as collection and transportation systems; hydraulic theory; flow measurement; pumping; treatment methods; solids digestion; solids processing and disposal; polishing and industrial waste treatment.

6197 - AIR & WATER QUALITY CONTROL PROCESSES 3 credits

A study of the processes utilized to reduce or eliminate pollution of the atmosphere. Topics such as combustion, precipitation, filtration, screening, catalysis, adsorption and absorption are investigated.

6200 - AIR & WATER SAMPLING & ANALYSIS 3 credits

An investigation of the equipment and techniques used in atmospheric sampling and of the instruments used to analyze the samples. Topics include the behavior of gases and suspended particles, sampling methods and equipment, electrical analysis, microscopy, spectroscopy and chromatography.

6201 - INDUSTRIAL HEALTH & SAFETY 3 credits

An investigation of the procedures and attitudes required so that man may safely work in the vicinity of industrial processes and equipment. Topics include the man-machine interaction, development of mental attitudes, housekeeping and the effect of the process atmosphere on health.

6234 - BASIC INSTRUMENTATION 3 credits

A study of electrical, electronic and pneumatic basic and operating principles as applied to instrumentation used for the measurement and control of process variables. Instrumentation terminology is introduced and familiarity with typical types and applications of instruments is developed. Laboratory experiments are performed to clarify and reinforce the fundamental principles. **PREREQUISITE:** 2331.

6328 - TREATMENT PLANT UNIT OPERATIONS 2 3 credits

An investigation of the physical and chemical processes utilized in the treatment of liquid wastes. It includes such topics as collection and transport systems; hydraulic theory; flow measurement; pumping; treatment methods; solids digestion; solids processing and disposal; polishing and industrial waste treatment.

GRAPHIC ARTS TECHNOLOGY

DEPT. 36

The Graphic Arts Department offers a curriculum designed to prepare students for the many and varied careers available in the commercial printing and advertising business.

The courses are devoted to functional discussions crossing most branches of the printing industry. It is the objective of the department to relate the many branches of the industry to each other and to the totality of contemporary printing.

Rochester Institute of Technology, as well as other institutions offering Graphic Arts speciality courses, has indicated that it will accept credits from this program toward an advanced degree in Printing and Publishing.

Minimum Grade Requirement: Graphic Arts Technology students must achieve a minimum grade point of 2.5 in Graphic Arts courses for graduation.

SEMESTER 1

| No. | Course Title | Class | Lab Credits |
|------|-------------------------------|-------|-------------|
| 1004 | English Composition 1 | 3 | 3 |
| 4086 | General Psychology | 3 | 3 |
| 6077 | Mathematics 2321, 22, 23 | 3 | 3 |
| 2334 | Graphic Arts Processes 1 | 2 | 3 |
| 6114 | Slide Rule Math | 1 | 1 |
| | Typography & Copy Preparation | 2 | 3 |
| | | 14 | 6 |
| | | | 16 |

SEMESTER 2

| No. | Course Title | Class | Lab Credits |
|------|-------------------------------|-------|-------------|
| 1005 | Composition 2: Intro. to Lit. | 3 | 3 |
| 4014 | Economics 1 | 3 | 3 |
| 6266 | Graphic Arts Typing | 3 | 3 |
| 6083 | Layout & Copy Preparation | 2 | 3 |
| 6078 | Graphic Arts Processes 2 | 2 | 3 |
| | | 13 | 6 |
| | | | 15 |

SEMESTER 3*

| No. | Course Title | Class | Lab Credits |
|------|------------------------------------|-------|-------------|
| 3007 | Chemistry of Lithography 1 | 3 | 3 |
| 6204 | Offset Strip & Plate (Elective) | 2 | 3 |
| 6075 | Process Photography (Elective) | 2 | 3 |
| 6203 | Graphic Design (Elective) | 2 | 3 |
| 6062 | Printing Management (Elective) | 3 | 3 |
| 6144 | Production Techniques 1 (Elective) | 9 | 3 |
| 6205 | Offset Presswork 1 (Elective) | 2 | 3 |
| 9136 | G.A. Coop (Elective) | | 3 |
| | | 14 | 21 |
| | | | 24 |

SEMESTER 4**

| No. | Course Title | Class | Lab Credits |
|------|-------------------------------------|-------|-------------|
| 3003 | Chemistry of Lithography 2 | 3 | 3 |
| 6145 | Production Techniques 2 (Elective) | 9 | 3 |
| 6204 | Offset Strip & Plate (Elective) | 2 | 3 |
| 6207 | Offset Presswork 2 (Elective) | 2 | 3 |
| 6206 | Advanced Typography (Elective) | 2 | 3 |
| 6075 | Process Photography (Elective) | 2 | 3 |
| 9136 | G.A. Coop (Elective) | | 3 |
| 6237 | Printing Production Mgt. (Elective) | 3 | 3 |
| | | 14 | 24 |
| | | | 25 |

*Semester 3

Select course 6204 or 6075.

Select course 6144 or 9136.

Select 2 of 3 courses: 6203, 6062, 6205.

**Semester 4

Select course 6204 or 6075.

Select course 6145 or 9136.

Select 2 of 3 courses: 6206, 6207 or 6237.

3003 - CHEMISTRY OF LITHOGRAPHY 2 4 credits
Topics in chemistry relating to the Graphic Arts including photography and photographic processes, colors, inks and printing. Laboratory. PREREQUISITE: 3007 Chemistry of Lithography 1.

3007 - CHEMISTRY OF LITHOGRAPHY 1 3 credits
A study of the fundamental principles of chemistry in relation to the properties, composition and structure of matter, the changes that matter undergoes and the laws governing these changes. Theories of chemical reactions, chemical bonding



and molecular structure are covered in preparing the student for advanced study in the lithographic process. Three one-hour lectures per week.

6062 - PRINTING MANAGEMENT 3 credits

This course builds a framework to aid in making correctly the many decisions which are the essence of good management of a printing plant, large or small. The principles of finance, cost control, supervision, industrial relations, estimating, pricing and planning for growth are stressed by basic theory and illustration of the application of this theory.

6075 - PROCESS PHOTOGRAPHY 3 credits
A lecture and laboratory course presenting the latest technical information and techniques in halftone photography consisting of conventional halftone, duotone, and various special and creative effects. The course is further designed to impress upon the student cameraman the interrelationships of his own field and that of the stripper, platemaker and press operating personnel. PREREQUISITES: 6077 and 6078.

6077 - GRAPHIC ARTS PROCESSES 1 3 credits
A fundamental survey of offset lithography with the objective of acquainting the student with the various techniques and procedures of this printing process. Laboratory experiences are provided in the areas of process camera operation and stripping.

6078 - GRAPHIC ARTS PROCESSES 2 3 credits
A study of proofing and platemaking including critical analysis of various types of plates. Instruction includes operation of presses and related equipment to varied job specifications.
PREREQUISITE: 6077

6083 - LAYOUT AND COPY PREPARATION 3 credits
Areas of balance, proportion and proper paste-up procedures are covered. The student also gains an understanding of the tools and materials used in layout and paste-up.

6114 - TYPOGRAPHY AND COPY PREPARATION 3 credits
Theory and practice emphasizing craftsmanship and appreciation of typographic principles. Laboratory work includes creative projects in typographic composition for effectiveness and aesthetic value.
PREREQUISITE: 6114.

6144 - PRODUCTION TECHNIQUES 1 3 credits
All process courses taught in the graphic arts technology program are based on progressively more difficult exercises which the student performs in order to reach a predetermined achievement level. Production technique courses are designed to provide the student with actual live-job production responsibilities in the areas of layout and type composition, camera and stripping, platemaking and presswork.
PREREQUISITE: 6266.

6145 - PRODUCTION TECHNIQUES 2 3 credits
A continuation of 6144. PREREQUISITE: 6144.

6203 - GRAPHIC DESIGN 3 credits
A course designed to further develop the student's ability to create layouts for advertising. The student gains further knowledge in the arrangements of headlines, copy blocks, photographs, art work, logotypes, borders and other typographic devices that serve as a preview for the client and a guide for the illustrator, letter artist, engraver, typesetter and printer. The lab portion of the course will acquaint the student with the mechanical operations of the typographer, artist, photographer, process cameraman and pressman in relation to what must be specified when ordering any of their services in the production of an advertisement. PREREQUISITES: 6083 and 6114.

6204 - OFFSET STRIPPING & PLATEMAKING 3 credits
This course is centered on the art of assembling photographic films into the exact arrangement that will appear on the printing plates, maintaining at times accuracy of three-thousandths of an inch. The course includes detailed information and techniques utilized in both black and white color stripping. In addition to the stripping operations, the student in this course will become involved in the producing of various types of offset plates and several methods of photo-composition, including preparation of various types of layouts and operations of photo-composing machines. PREREQUISITES: 6077 and 6078.

6205 - OFFSET PRESSWORK 1 3 credits
This course includes the principles and procedures of registration, blanket and plate preparation and maintenance, operation of inking and dampening system, delivery operation and running the press. The materials also cover the common press troubles, including their recognition and solution, ink-water balance, squeeze pressures and other technical press operations and adjustments. PREREQUISITES: 6077 and 6078.

6206 - ADVANCED TYPOGRAPHY 3 credits
The objective of this course is to demonstrate what typography is and particularly what it is to the modern graphic designer. The student is made aware of the many influences that have shaped modern typography, with particular emphasis on the effects of technology and contemporary art movements. Laboratory work includes creative projects in typographic composition for effectiveness and aesthetic value. PREREQUISITE: 6114

6207 - OFFSET PRESSWORK 2 3 credits
A continuation of Offset Presswork 1 (6705), Offset Presswork 2 allows the student to work with larger offset presses. Lab assignments are designed to give students experiences in the operation of larger offset presses including register, ink and water balance, and maintenance. PREREQUISITE: 6205.

6237 - PRINTING PRODUCTION MANAGEMENT 3 credits
A continuation of Printing Management (6026). The principles of production control, planning, purchasing, inventory control, scheduling, and management are stressed by basic theory and case study application to solve basic production problems. PREREQUISITE: 6062.

6266 - GRAPHIC ARTS TYPING 3 credits
This is a one semester course designed primarily for the Graphic Arts student. The course covers correct typewriting techniques and the development of speed and accuracy. This course is primarily to teach keyboard skills for manuscript typewriting thereby preparing the student for computerized and photo composition techniques applicable to their field.

CE6109 - FLEXOGRAPHY 1 3 credits
A study of the theory and practice of the flexographic printing process, the uses and development of flexography, plate and ink requirements, press principles and operation.

CE6116 - FLEXOGRAPHY 2 3 credits
A continuation of Flexography 1 stressing this printing technique on a wide variety of surfaces. The seven principal flexographic variables are further developed and studied.

CE before a course number indicates: Continuing Education (offered currently only in the Evening Division).

HEATING/POWER & AIR CONDITIONING

DEPT. 33

The Heating/Power and Air Conditioning program is unique in the sense that it is one of two such programs offered on the east coast. An up-to-date extensive laboratory facility has been created for this course, utilizing the very latest in equipment and control devices.

Seniors who successfully complete all course requirements are awarded the Associate in Science Degree. In addition, they are given the opportunity to earn additional awards by taking the Certificate of Competency and the Stationary Engineers license examinations as administered by the Massachusetts Department of Public Safety.

Placement opportunities are excellent and varied. The Heating/Power and Air Conditioning graduate is prepared to enter a stable, basic industry that offers career positions such as manufacturers' representatives, field service engineers, energy system detailers/designers, lab technicians, construction field estimators, sales engineers and independent businessmen. Minimum Grade Requirement: Students must achieve a grade of "D" as the minimum passing grade in all "6000" series technical courses. A student must have earned a minimum Cumulative Quality Point average of 2.0 for graduation.

SEMESTER 1

| No. | Course Title | Class | Lab Credits |
|-----|--------------------------------|-------|-------------|
| 004 | English Composition 1 | 3 | 3 |
| 073 | Mathematics 2321, 22, 23 | 3 | 3 |
| 073 | Human Relations at Work 3 | 3 | 3 |
| 020 | Engineering Graphics 331 | 1 | 3 |
| 110 | Theory of Controls | 3 | 3 |
| | Mechanical Skills & Procedures | 1 | 3 |
| | | 14 | 6 |
| | | | 16 |

SEMESTER 2

| No. | Course Title | Class | Lab Credits |
|-----|-------------------------------------|-------|-------------|
| 005 | Composition 2: Intro. to Literature | 3 | 3 |
| 334 | Mathematics 2331, 32, 33 | 3 | 3 |
| 044 | Slide Rule Math | 1 | 1 |
| 040 | Hydronic Layouts & Construction | 1 | 3 |
| 111 | Combustion Control Circuits | 2 | 2 |
| 115 | Mechanical Skills & Procedures 2 | 2 | 4 |
| | Principles of Refrigeration | 1 | 2 |
| | | 13 | 11 |
| | | | 18 |

SEMESTER 3

| No. | Course Title | Class | Lab Credits |
|------|----------------------------------|-------|-------------|
| 1002 | Chemistry 1 | 3 | 3 |
| 1041 | Commercial Programming Controls | 2 | 4 |
| 1042 | Heating System Design | 2 | 2 |
| 1155 | Power Plant Operation 1 | 1 | 2 |
| 1222 | Fundamentals of Air Conditioning | 1 | 2 |
| | | 9 | 13 |
| | | | 15 |

SEMESTER 4

| No. | Course Title | Class | Lab Credits |
|------|---------------------------------|-------|-------------|
| 1008 | Technical Report Writing | 3 | 3 |
| 1043 | Adv. Heating System Design | 2 | 2 |
| 1045 | Industrial Control Applications | 2 | 4 |
| 1156 | Power Plant Operation 2 | 1 | 2 |
| 1126 | Air Conditioning Laboratory | 1 | 2 |
| 1007 | Fundamentals of Speech | 3 | 3 |
| | | 12 | 10 |
| | | | 17 |

6020 - THEORY OF CONTROLS

3 credits

A course designed to deal with the basic theories and concepts required by both air conditioning and heating servicemen. Topics covered include: basic electricity, meters, principles of motor operation, transformers and relays, along with an introduction to control circuits. These basics are essential in order that an individual may comprehend the control circuits to which he will be exposed in his line of work.

6040 - COMBUSTION CONTROL CIRCUITS

3 credits

A combination lecture and laboratory course which presents the basic controls and control systems found in domestic hot

water, steam and forced warm air heating systems. In addition, instruction is given in the wide variety of burners used by the industry, how the integral parts of these burners function and how to test & repair them. Internal and external schematic wiring diagrams are studied in detail. The laboratory allows the student to wire, safety check and fire test units, both old and new, as found in today's industry. PREREQUISITES: 6020 Theory of Controls.

6041 - COMMERCIAL PROGRAMMING CONTROLS

4 credits

A combination of Control Circuits and Applications 1. Basic electronic, solid state and programming controls used in the heating industry are introduced. A number of these controls are analyzed to illustrate their operation. Industrial schematic wiring diagrams are studied and the student learns to interpret line and ladder type of diagrams. Field trips are arranged to observe control systems in operation. Laboratory experience includes installing and piping of burners, the wiring and designing of controls, with emphasis on combustion testing to meet today's pollution control requirements. PREREQUISITE: 6040 Combustion Control Circuits.

6042 - HEATING SYSTEM DESIGN

3 credits

A combination lecture and laboratory course designed to acquaint the student with proper principles used in designing hydronic heating systems. A thorough coverage is made of heat transfer through building materials essential in the calculations of heat losses, through both residential and commercial structures. Instruction is given in the layout and construction of series loop, one pipe and reverse return hydronic heating systems. The student will develop the knowledge required to design a good, efficient hydronic system.

6043 - ADVANCED HEATING SYSTEM DESIGN

3 credits

A continuation of Heating System Design. Instruction is given in the layout, construction and distribution of steam heating systems. Calculations of domestic hot water requirements in residential and institutional buildings are covered in detail. Emphasis is placed on calculation of heat gain in addition to heat loss. Architectural and construction blueprint reading on light commercial and industrial structures is introduced. PREREQUISITE: 6042 Heating System Design.

6044 - HYDRONIC LAYOUTS & CONSTRUCTION

2 credits

A combination lecture and laboratory program to introduce the student to the basic theories and specialized skills essential for the construction of sound, practical, functional and competitive wet heat installations. Topics include specifications and data for pipe and respective components, review of metal tubing and fittings, interpretation of basic architectural specifications and working drawings, a comparison of sample applications as they relate to current principles and practices. A summary assignment obligation to allow the student to express and illustrate individual creative layout and design. One hour lecture, three hours of laboratory. PREREQUISITE: 6073 Engineering Graphics 331.

6045 - INDUSTRIAL CONTROL APPLICATIONS

4 credits

A continuation of the study of larger, more complex control systems required by certain states and insurance associations.

Emphasis is placed on studying the latest in self-checking programming controls used with gas, oil and combination gas-oil burners. The use of factory units brings this application into focus. Complete testing and servicing are emphasized. Periodically, factory representatives are invited to lecture on the latest, up-to-date equipment in this constantly changing industry. Qualified students are eligible to take the Massachusetts examination for a Commercial-Industrial license. PREREQUISITE: 6041 Commercial Programming Controls.

6073 - ENGINEERING GRAPHICS 331 2 credits

A course that deals with the graphic representation of physical objects and relationships. It is designed to provide the student with fundamental knowledge of the principles of mechanical drafting and to develop necessary skills in the basic techniques of using special tools and equipment. Subjects covered include lettering, orthographic projection, dimensioning, simple scale drawings, developed surface, geometric construction and detail and assembly drawings. One hour lecture, three hours of laboratory.

6111 - MECHANICAL SKILLS & PROCEDURES 2 4 credits

An advanced course that is predominantly a laboratory program. Instruction is directed toward the student achieving competency in specialized skill areas involving procedure, technique, experiment, application, service and test. Emphasis is placed on laboratory assignments, scheduled specifically to allow for adequate work experience. The various training phases being erection and fabrication of residential thermal devices, unit assembly of hardware components, combustion equipment installation, control safeguard selection and wiring hookup, efficiency testing of units and the documentation of results. PREREQUISITE: 6110 Mechanical Skills and Procedures 1.

6115 - PRINCIPLES OF REFRIGERATION 2 credits

The practice of refrigeration is based upon two well-known principles of physics. The design and operation is based on the principles of thermodynamics, a branch of physics which involves the study of heat energy, while the actual process of cooling an enclosed space draws on knowledge from a branch of physics called psychrometry. Therefore, a theoretical treatment of such concepts as; temperature, total heat, density, specific gravity, pressure, energy, work and power is presented. Attention is then directed to psychrometry. A thorough knowledge of the properties of air; dew-point, wet-bulb, dry-bulb, moisture, relative humidity is essential. A study is then made of the refrigerants, their properties and characteristics used in refrigeration, covering pressure-temperature relationships, boiling and freezing points and heat capacities with extensive use of tables and curves.

6126 - AIR-CONDITIONING LABORATORY 2 credits

Analyzing, trouble shooting and servicing refrigeration and air-conditioning systems are emphasized in this semester. Electric, pneumatic controls and protection devices: freezstats, thermostats, capacitors, low oil, high and low head pressure cut-outs and compressor overload devices are studied in detail. Cooling towers, both mechanical and natural draft with parabolic designs are featured, as is water chemistry with chill and condenser water treatment including; rust inhibitors, algae



control and filtering processes. PREREQUISITE Fundamentals of Air-Conditioning (6222).

6155 - POWER PLANT OPERATION 1 2 credits

Power plant engineering is a science based on those fundamental principles which underlie chemistry and especially the branches of physics known as "Thermodynamics, Heat Transfer, Fluid Mechanics and Mechanics." A knowledge of the properties of Air, Water and Steam is essential to the understanding of the operation of power plant equipment, as is Fuels, Combustion and Fuel-gas analysis. Steam Tables, Calorimeters, Orsat testers and other testing devices are used. Boilers, boiler auxiliaries and accessories are studied and viewed in actual operation in local power plants.

6156 - POWER PLANT OPERATION 2 2 credits

With the principles learned in Power Plant Operation 1, this course is designed to involve the operation, maintenance, code requirements and the efficiencies of power plants. Attention is directed to steam generator construction, safety devices, pumps, feedwater heaters, piping systems and traps. Boiler feedwater treatment has become a scientific chemical procedure to condition the boiler water preventing scale corrosion, caustic embrittlement, priming and foaming that causes carry-over. Preparation is made for a Massachusetts State Operator's license and a N.I.U.L.P.E. PREREQUISITE Power Plant Operation 1 (6155).

6222 - FUNDAMENTALS OF AIR-CONDITIONING 2 credits

With the Principles of Refrigeration mastered, a detailed analysis of the refrigeration cycle is made. The "Compression" cycle with its components: Compressor, Condenser, Metering Devices, Evaporator, and the "Absorption" cycle with its components: Generator, Absorber, Evaporator, and their pumps and controls. Refrigeration tools: gage manifolds, charging cylinders, vacuum pumps, leak detectors and others are demonstrated and used in a laboratory atmosphere. Environmental conditioning including: Temperature, Humidifying, Dehumidifying, Air Distribution, Filtering and the calculations of these requirements being determined. PREREQUISITE: 6115 Principles of Refrigeration.

Students enrolled in this program will receive a broad base in the development and maintenance of land areas. Topics ranging from plant identification and use, tree and landscape maintenance, to landscape design and construction are included as part of the curriculum. The importance of qualified field personnel is stressed throughout the program. Students will be given an appreciation and understanding of the effects that can be created by well-planned landscape design and maintenance.

Graduates may be employed by nurseries, landscape contractors, private and public parks and by business firms as grounds maintenance specialists. With the rapid development of more complex and varied materials and equipment for use in this field, there is an increasing need for properly trained personnel to fill responsible positions, both in field work and in planning and management.

Minimum Grade Requirement: All Landscape Technology courses shall be completed with a grade of "D" (63 or 1.0) or above. Any course failed must be repeated before graduation and each course may be repeated only once. In addition, the student shall have achieved a 2.0 Q.P.A. and shall have remained in good academic standing as outlined below:

- A. At the beginning of second semester, the student must maintain a 1.5 Q.P.A.
- B. At the beginning of third semester, the student must maintain a 1.7 Q.P.A.
- C. At the beginning of fourth semester, the student must maintain a 1.9 Q.P.A.

A student not meeting the above academic standards will be placed on academic probation for one semester. If at the end of this period no improvement has taken place, the student will be removed from the program.

SEMESTER 1

| No. | Course Title | Class | Lab Credits |
|------|--------------------------|-------|-------------|
| 1004 | Eng. Comp. 1 | 3 | 3 |
| 4073 | Human Rel. at Work 3 | 3 | 3 |
| | Mathematics 2321, 22, 23 | 3 | 3 |
| 3021 | Botany 1 - Gen. Botany | 2 | 2 |
| 5088 | Prin. of Horticulture | 2 | 3 |
| | | 13 | 15 |

SEMESTER 2

| No. | Course Title | Class | Lab Credits |
|------|---|-------|-------------|
| 1005 | Eng. Comp. 2 | 3 | 3 |
| 3002 | Chemistry 1 | 3 | 3 |
| 3022 | Trees in the Landscape | 1 | 4 |
| 6140 | Presentation Techniques | 6 | 3 |
| | Humanities Elective (or completion of Math Requirement) | 3 | 3 |
| | | 10 | 13~ |
| | | | 16 |

SEMESTER 3

| No. | Course Title | Class | Lab Credits |
|------|-------------------------|-------|-------------|
| 3023 | Shrubs in the Landscape | 1 | 4 |
| 6086 | Landscape Design 1 | 1 | 4 |
| 6089 | Landscape Operations | 2 | 2 |
| 6090 | Arboriculture | 2 | 2 |
| 6093 | Surveying 721 | 1 | 4 |
| | English Elective | 3 | 3 |
| | | 10 | 16 |
| | | | 18 |

SEMESTER 4

| No. | Course Title | Class | Lab Credits |
|------|---------------------------|-------|-------------|
| 3024 | Turf Management | 2 | 2 |
| 6085 | Plant Propagation | 2 | 2 |
| 6087 | Landscape Design 2 | 1 | 4 |
| 6094 | Earth Forms & Structures | 2 | 2 |
| 5029 | Small Business Management | 3 | 3 |
| | | 10 | 10 |
| | | | 15 |

3021 - BOTANY 1

3 credits

An introductory course in general botany which provides an understanding of the structure and growth of plants. Points

stressed are physiology, reproduction and ecological considerations. Two hour lecture, one two-hour lab.

3022 - TREES IN THE LANDSCAPE

3 credits

A course dealing in tree identification and use, as related to landscape work. Important types, both native and introduced, are discussed. Limited to trees generally hardy in the New England area. Representative types are discussed in detail during laboratory sessions. Lectures deal with general topics concerning tree use. Field trips, both on and off campus, are used to view the trees discussed. One hour lecture, two two-hour labs.

3023 - SHRUBS IN THE LANDSCAPE

3 credits

A continuation of Botany 2, covering the identification and use of the commonly used native and introduced shrubs and vines in this area. Emphasis is placed upon the best use of the types involved. Lectures are concerned with utilization of plant features such as flowers and fruits and with effects of the environment on the plants discussed. Laboratories are used for the discussion of specific plants. One hour lecture, two two-hour labs.

3024 - TURF MANAGEMENT

3 credits

The study and identification of turf grasses as used in the New England area. Much emphasis is placed upon the best use of the types involved. Topics in lectures include soil and fertilization requirements, drainage and irrigation, best turf types, grass and seed identification, maintenance and renovation, and disease and insect control. The laboratories are involved in soil testing, turf growing, maintenance techniques and field trips. Two hour lecture, one two-hour lab.

6085 - PLANT PROPAGATION

3 credits

A course dealing with the procedures used in propagating and growing plant materials. Lectures deal with the theoretical aspects of growing and the laboratories are devoted to greenhouse and field work. Several field trips are taken to commercial nursery operations in the area. Two hour lecture, one two-hour laboratory.

6086 - LANDSCAPE DESIGN 1

3 credits

A course in residential landscape design stressing basic design techniques and elements. Topics covered in lecture are line, shape, form, texture, pattern, color, the processes of design, the development of outdoor spaces and design presentation. Design problems in lab deal with entry ways, driveways, outdoor living areas, play areas, private gardens and the orientation of structures on the site. PREREQUISITE: 6140.

6087 - LANDSCAPE DESIGN 2

3 credits

A continuation of Land Design 1 stressing presentation and analysis. The areas dealt with are urban shopping and business spaces, small office building, schools and playgrounds, and parking areas. PREREQUISITE: 6086.

6088 - PRINCIPLES OF HORTICULTURE

3 credits

A basic course in general horticulture, introducing the student to the fundamentals of soil study and use, insect and disease



control and plant production techniques. The lectures cover the theoretical aspects of horticulture and the laboratories are used for field trips and practical work.

6089 - LANDSCAPE OPERATIONS(PLANTING) 3 credits
This course deals with the principles involved in estimating, carrying out and maintaining landscape work. The lectures are used to introduce and discuss the work areas involved and laboratory time is spent in moving and planting trees and shrubs, estimating work and the use and maintenance of machinery used in this type of work. Two hour lecture, one two-hour laboratory.

6090 - ARBORICULTURE 3 credits
A course dealing with the basic aspects of arboriculture. The lectures are concerned with tree growth and maintenance and the laboratories are used to instruct in tree climbing, pruning and repair and feeding techniques. Two hour lecture, one two-hour laboratory.

6093 - SURVEYING 721 3 credits
A course teaching the basic surveying operations used in

landscape work. The use of simple instruments such as tapes and hand levels is covered first followed by study of transits and construction levels. Mapping and contour studies are carried out and the use of surveying in typical landscape operations is stressed.

6094 - EARTH FORMS AND STRUCTURES 3 credits
A study of the equipment, materials and methods used in constructing landscape features such as walls, walks, drives, fences and terraces. Considerable field work is involved, in which the students lay out and construct features as mentioned above. Two hour lecture, one two-hour laboratory.
PREREQUISITE: 6093 Surveying 721.

6140 - PRESENTATION TECHNIQUES 3 credits
A course in mechanical drafting, stressing the media and techniques commonly used in the preparation of landscape plans. The use of instruments, lettering and line technique is covered first, followed by the development of isometric and perspective drawings. Working in 3-dimensions is stressed, so that the student may best visualize spatial relationships in future landscape design courses. Three two-hour labs.

LASER ELECTRO-OPTICS TECHNOLOGY

DEPT. 35

Laser Electro-Optics Technology is one of the more rapidly growing technical fields in America today. The trained technician can expect favorable job opportunities, promotion potential and rapid advancement.

STCC's program is designed to expose the student to four major areas: Laser Systems, Electronics, Optics and Electro-Optics.

The student will learn about the laser both as an instrument and as an integral part of a system designed for industrial, medical and scientific application.

The electronics used in generating and controlling the laser will be taught. The use of the laser in electronics production, testing, maintenance, research and development is part of the curriculum.

In the field of optics, the student will acquire a good working knowledge of light, geometrical and physical optics, optical components and optical systems.

Finally, the student will devote a large portion of his time to incorporating optical and laser skills and knowledge into developing Electro-Optical Techniques and Systems.

Minimum Grade Requirement: Students must receive a grade of "D" or better. A Q.P.A. of 2.0 must be achieved for graduation.

SEMESTER 1

| No. | Course Title | Class | Lab | Credits |
|------|---------------------------|-------|-----|---------|
| 1004 | English Composition 1 | 3 | | 3 |
| | Mathematics 2331, 32, 33 | 3 | | 3 |
| 2334 | Slide Rule Math | 1 | | 1 |
| 4073 | Human Relations at Work | 3 | | 3 |
| 6019 | Basic Electronics 1 | 3 | | 3 |
| 6178 | Electronics Lab 1 | | 4 | 2 |
| 6239 | Graphics for Elect. Tech. | 1 | 2 | 2 |
| | | 14 | 6 | 17 |

SEMESTER 2

| No. | Course Title | Class | Lab | Credits |
|------|--------------------------|-------|-----|---------|
| 1005 | English Composition 2 | 3 | | 3 |
| | Mathematics 2341, 42, 43 | 3 | | 3 |
| 6024 | Basic Electronics 2 | 3 | | 3 |
| 6035 | Semiconductor Circuits 1 | 3 | | 3 |
| 6179 | Electronics Lab 2 | | 4 | 2 |
| 3012 | Physics | 3 | 3 | 4 |
| | | 15 | 7 | 18 |

SEMESTER 3

| No. | Course Title | Class | Lab | Credits |
|------|----------------------------------|-------|-----|---------|
| 1008 | Technical Report Writing | 3 | | 3 |
| 6027 | Computer Concepts and Logic Cir. | 3 | | 3 |
| 6365 | Introduction to Lasers | 3 | 3 | 4 |
| 6366 | Geometrical Optics | 3 | 3 | 4 |
| 6212 | Semicond. Circuits 2 | 3 | | 3 |
| | | 15 | 6 | 17 |

SEMESTER 4

| No. | Course Title | Class | Lab | Credits |
|------|---------------------------------|-------|-----|---------|
| 6367 | Laser Electro-Optics Components | 3 | | 3 |
| 6368 | Wave Optics | 3 | 3 | 4 |
| 6039 | Integrated Electronics | 3 | | 3 |
| 6369 | Laser Projects | 3 | 3 | 4 |
| | | 12 | 6 | 14 |

6365 - INTRODUCTION TO LASERS

4 credits

Elements of a laser, operation of a helium-neon gas laser, laser physics, optical cavities, properties of laser light, survey of laser systems.

6366 - GEOMETRICAL OPTICS

4 credits

Reflection and refraction of light, graphical ray tracing techniques, f-stops and apertures, imaging with a single lens, types of lenses, primary and secondary focal points, thin lens equation, imaging with multiple lenses, simple optical systems (microscopes, telescopes, collimators).

6367 - LASER ELECTRO-OPTIC COMPONENTS

3 credits

Optical tables and benches, component support, properties and uses of filters, optical windows, beamsplitters, etalons, mirrors, lenses, polarizers, gratings, photographic supplies and non-linear materials.

6368 - WAVE OPTICS

4 credits

Light as an electromagnetic wave, light sources, radiometric units, absorption, scattering, interference, diffraction, holography and polarization.

6369 - LASER PROJECTS

4 credits

Construction and testing of a laser, optical or electro-optic device such as a helium-neon laser, cw-pumped nd:yag laser, co2 laser, optical power meter, autocollimator, led communications link or photomultiplier power supply. Maintaining a laboratory notebook required.



MACHINE AND TOOL DESIGN TECHNOLOGY

DEPT. 34

This program prepares the graduate as an Engineering Aide or Technician in the fields of mechanical, industrial and manufacturing engineering. The program develops the necessary background in Mathematics, Engineering Graphics, Physics, Chemistry, Strength of Materials, Fluid Power and Design Principles. To qualify in the fields listed above, graduates are employed as detail draftsmen, tool and machine designers, laboratory assistants in research and development, sales engineers and field representatives.

In the design laboratory, the student is given the opportunity to use his initiative and creative ability in designing machines and tool complexes of his own. Since a background in high school Algebra, Physics, Mechanical Drawing and Chemistry is required in the first semester, these courses must be prerequisites.

Minimum Grade Requirement: For all "6000" series technical courses a grade of "D" (1.3) or better will be required. A 2.00 Q.P.A. will be accepted for graduation.

SEMESTER 1

| No. | Course Title | Class | Lab Credits |
|------|---------------------------|-------|-------------|
| 1004 | English Composition 1 | 3 | 3 |
| | Mathematics 2331, 32, 33 | 3 | 3 |
| 2334 | Slide Rule Math | 1 | 1 |
| 3002 | Chemistry 1 | 3 | 4 |
| 6054 | Manufacturing Processes 1 | 2 | 3 |
| 6065 | Tool Design 1 | 2 | 6 |
| | | 14 | 12 |
| | | | 18 |

SEMESTER 2

| No. | Course Title | Class | Lab Credits |
|------|---------------------------------|-------|-------------|
| 1005 | English Comp. 2: Intro. to Lit. | 3 | 3 |
| | Mathematics 2341, 42, 43 | 3 | 3 |
| 3012 | Physics 1 | 6 | 4 |
| 6055 | Manufacturing Processes 2 | 2 | 3 |
| 6113 | Tool Design 2 | 2 | 6 |
| | | 10 | 15 |
| | | | 17 |

SEMESTER 3

| No. | Course Title | Class | Lab Credits |
|------|----------------------------|-------|-------------|
| 6058 | Strength of Materials | 3 | 3 |
| 6150 | Fluid Power | 3 | 3 |
| 6066 | Design of Machine Elements | 2 | 6 |
| 6232 | Fortran for Sci. & Engr. | 3 | 3 |
| | | 11 | 9 |
| | | | 14 |

SEMESTER 4

| No. | Course Title | Class | Lab Credits |
|------|--------------------------|-------|-------------|
| 1008 | Technical Report Writing | 3 | 3 |
| 6064 | Industrial Materials | 3 | 3 |
| 6067 | Machine Design 1 | 2 | 6 |
| 4073 | Human Relations at Work | 3 | 3 |
| 3013 | Physics 2 | 3 | 4 |
| | | 14 | 9 |
| | | | 17 |

6054 - MANUFACTURING PROCESSES 1

3 credits

This course is designed to provide the student with theoretical as well as practical experience involving manufacturing processes. The processes include foundry processes, hard mold casting processes, powder metallurgy, primary metal working processes, metal shearing and forming, welding and allied processes. Economics of metal cutting in addition to measurement and inspection using the more common measuring tools are introduced. The common metal cutting tools are covered with laboratory experiments with emphasis on speeds, feeds, finishes and tolerances.

6055 - MANUFACTURING PROCESSES 2

3 credits

This course is a continuation of Manufacturing Processes 1 providing theory and practical experience in metal cutting processes. Laboratory experiments involving turning operations, drilling, milling, shaping, grinding, sawing and benchwork. A special emphasis is placed on process planning involving actual selected jobs in relation to process capability, sequence of operations, set-up time estimating, feed and speed calculations and proper machine tool selection.

6058 - STRENGTH OF MATERIALS

3 credits

A study of forces and force systems and their applications to materials. Stress and strain produced by the application of forces on beams, columns, trusses, and riveted and welded sections are studied for simple tension, compression and shear. Laboratory experiments provide experience in measuring and calculating stresses produced for conditions of tension, compression, shear, bending and torsion.

6064 - INDUSTRIAL MATERIALS

3 credits

An introduction to engineering materials and their properties. Emphasis is placed on the factors that determine material properties and the process by which these properties can be changed in a controlled manner. Materials covered include steel, cast iron, non-ferrous metals and alloys, plastics, rubber and some other non-metallics.

6065 - TOOL DESIGN 1

4 credits

This course is divided into two parts. The first part covers the principle of detailing parts for interchangeable manufacturing.



The areas of limits, fits, tolerance analysis and surface finishes are covered, as well as the heat treatment of the components. The second part covers introduction to Tool Design, the design of gauges and cutting tools. Lectures and laboratory applications are combined to help the student gain knowledge and experience necessary to design tools that are used for mass production. PREREQUISITES: High school algebra, trigonometry and drafting. The student makes use of manufacturers' catalogs. Throughout the course, the students meet for two one-hour lectures and two three-hour labs.

6066 - DESIGN OF MACHINE ELEMENTS 4 credits

A course in which machine design principles are studied and methods of calculating the required size and shape of various machine parts are developed. Selection of proper materials is given consideration. Stress and strain, design stresses, keys and fasteners, threaded numbers, welded and riveted connectors and shafts are considered. The principles of motions, velocities and acceleration of various linkages are considered. The students meet for 2 one-hour lectures and 2 three-hour labs.

6067 - MACHINE DESIGN 1 4 credits

The course involves the study of disk and cylindrical cams, gears, gear trains, pulleys and couplings. Interference, contact ratio, strength and dynamic loading of gears are considered and simple reverted, compound and epicyclic gear trains are worked out in detail. The student is given the opportunity to integrate knowledge acquired during the machine design program by carrying out projects in which he designs complete machines or sub-assemblies. He is required to analyze the problem, gather pertinent information, carry out the necessary mathematical operations, make working drawings and check his work. Throughout the course, he is encouraged to use his own judgement and initiative to the maximum extent possible. Students meet for two one-hour lectures and two three-hour labs per week.

6113 - TOOL DESIGN 2 4 credits

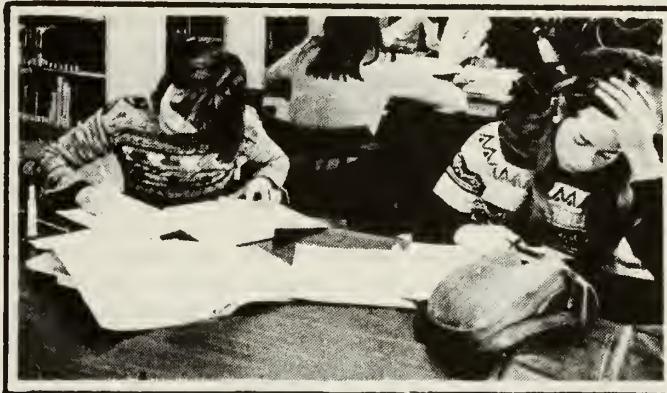
This course is the continuation of course 6065, Tool Design 1. It covers the design of jigs, milling fixtures, grinding fixtures, lathe fixtures, boring fixtures, miscellaneous fixtures, blanking dies and other dies. Laboratory problems involve the design and complete working drawings of the above. Industrial standards are used throughout. PREREQUISITE: 6065. Students meet for two one-hour lectures and two three-hour lab periods a week.

6150 - FLUID POWER 3 credits

The basic theory of both hydraulics and pneumatics is developed in relation to either driving or controlling industrial machinery. Fluid power equipment is discussed from the standpoint of application. Skill is developed in the layout and understanding of fluid power circuits. PREREQUISITES: 2331, 2333.

6251-6260 - MACHINE SHOP TECHNIQUES 1 credit per module

6251-Module 1 Basic Shop Techniques
6252-Module 2 Advanced Lathe Operations
6253-Module 3 Advanced Milling Machine Operations



6254-Module 4 Tape Machine Operations

6255-Module 5 Grinding Machine Operation

6256-Module 6 Jig Boring

6257-Module 7 Elementary Welding

6258-Module 8 Heat Treating

6259-Module 9 Tig Welding

6260-Module 10 Forging Techniques

PREREQUISITES: Module 1,7,8-none. Remaining modules by permission of instructor.

6232 - FORTRAN FOR SCIENTISTS & ENGINEERS

3 credits

This course is designed to offer an introduction to the computer language Fortran. The content of the course will include a brief introduction to the general theory of digital computers as well as fortran programming. Fortran will be studied as an example of a computer language. Special attention will be placed upon using Fortran as a powerful tool in solving a number of diverse problems drawn from science and engineering. PREREQUISITES: 2311-13.

6241-6249 - PROGRAMMED ENGINEERING GRAPHICS

1 credit per module

6241-Module 1, Instruments and their use, applied geometry, orthographic drawing and sketching.

6242-Module 2, Lettering, auxiliaries: Normal and edge views, sections and conventions.

6243-Module 3, Intersections and developments, drawings and the shop working drawings.

6244-Module 4, Dimensions, notelimits, catalogues.

6245-Module 5, Introduction, electricity and batteries, S-hematics, assembly-disassembly.

6246-Module 6, Power distribution graphics: Electrical drafting, contractor drawings.

6247-Module 7, Electronics graphics: Electrical (electronic drafting), system design, special equipment.

6248-Module 8, Architectural graphics: Oblique drawings, drawing of structures graphical vector analysis.

6249-Module 9, Perspective drawings, shapes and shadows, presentation drawings.

CE6264 - INTRODUCTION TO INDUSTRIAL SAFETY

3 credits

This course is intended to provide the student with basic background information concerning safety. To prepare him to recognize hazards and to develop accident prevention and loss control methods - procedures and programs - in conformity with codes and safety engineering principles.

CE before a course number indicates: Continuing Education (offered currently only in the Evening Division).

SOLAR ENERGY OPTION

DEPT. 29

Fuel shortages to provide the energy needs of the country have resulted in the search for alternative energy sources. Although not a new concept, the use of the sun to provide energy has become increasingly popular in the last few years.

It is estimated that within a short period of time, packaged solar systems will be in mass production. Solar energy as an alternative to today's fuels will become a reality in the not too distant future.

Allied to this anticipation growth will be the need for trained technicians in the solar energy field. Successful graduates of the Solar Energy Option will be qualified to install complete water or air-based solar collector heating systems in new or existing structures. Also, graduates will be able to determine, through on-site inspection, the least expensive combination of solar collectors, thermal reservoir, insulation and back-up burners for any structure. In addition, the student will learn to evaluate the cost/effectiveness of new solar collector technologies.

Various positions awaiting the Solar Energy Option graduate are: solar panel manufacturers representative; field service engineer (solar); solar energy system detailer/designer; construction field estimator; solar system sales engineer and energy consultant.

SEMESTER 1

| No. | Course Title | Class | Lab | Credits |
|------|----------------------------------|-------|-----|---------|
| 1004 | English Composition 1 | 3 | | 3 |
| | Mathematics 2321, 22, 23 | 3 | | 3 |
| 2334 | Sliderule Math | 1 | | 1 |
| 4073 | Human Relations at Work 3 | 3 | | 3 |
| 6073 | Engineering Graphics 331 | 1 | 3 | 2 |
| 6020 | Theory of Controls | 3 | | 3 |
| 6110 | Mechanical Skills & Procedures 1 | 1 | 3 | 2 |
| | | 15 | 6 | 17 |

SEMESTER 2

| No. | Course Title | Class | Lab | Credits |
|------|------------------------------------|-------|-----|---------|
| 3002 | Chemistry 1 | 3 | 3 | 4 |
| | Mathematics 2331, 32, 33 | 3 | | 3 |
| 6370 | Intro. to Alternative Energy Syst. | 2 | | 2 |
| 6044 | Hydronic Layouts & Construct. | 1 | 3 | 2 |
| 6040 | Combustion Control Circuits | 2 | 2 | 3 |
| 6111 | Mechanical Skills & Proced. 2 | 1 | 3 | 2 |
| 6115 | Principles of Refrigeration | 1 | 2 | 2 |
| | | 13 | 13 | 18 |

SEMESTER 3

| No. | Course Title | Class | Lab | Credits |
|------|----------------------------------|-------|-----|---------|
| | Social Science Elective | 3 | | 3 |
| 6371 | Solar Energy 1 | 3 | | 3 |
| 6041 | Commercial Programming Controls | 2 | 4 | 4 |
| 6042 | Heating System Design | 2 | 2 | 3 |
| 6222 | Fundamentals of Air Conditioning | 1 | 2 | 2 |
| 1007 | Fundamentals of Speech | 3 | | 3 |
| | | 14 | 8 | 18 |

SEMESTER 4

| No. | Course Title | Class | Lab | Credits |
|------|---------------------------------|-------|-----|---------|
| 1008 | Technical Report Writing | 3 | | 3 |
| 6043 | Advanced Heating Syst. Design | 2 | 2 | 3 |
| 6045 | Industrial Control Applications | 2 | 4 | 4 |
| 6372 | Solar Energy 2 | 2 | 4 | 4 |
| 6126 | Air Conditioning Laboratory | 1 | 2 | 2 |
| | | 10 | 12 | 16 |

6370 - INTRODUCTION TO ALTERNATIVE ENERGY SYSTEMS

2 credits

A survey of currently practical alternative energy conversion schemes with emphasis on solar collectors. The course begins with a review of global energy use and availability which quantifies the long-term need for conservation and utilization of renewable energy resources. The theory, operation and potential of various proposed large scale energy converters will be considered, including solar, geothermal, ocean thermal differences, wind, wave, ocean current and biogas systems. The problems of energy storage and distribution will be covered for



each system. Special details of solar systems will include insulation, solar angles, meteorological data, re-radiation, heat storage and thermal transfer.

6371 - SOLAR ENERGY 1

3 credits

A detailed course on the theory and application of various flat plate solar thermal collector systems. The efficiency, expected output, optimum configuration and longevity of specific collectors will be covered. The techniques of energy storage and the need for fossil fuel back-up heaters will be considered. Students will learn to assess a building's energy needs and to plan the lowest cost combination of conservation, solar-based heating and fossil fuel back-up. The details and relative merits of both air and water-based systems will be thoroughly covered.

6372 - SOLAR ENERGY 2

4 credits

A practical course in which students will learn to install complete solar collector systems and their associated controls. Special problems encountered in retrofitting existing buildings with solar equipment will be illustrated with site visits. Students will gain experience in using instrumentation to evaluate collector performance so that they can keep abreast of new developments in this rapidly growing field.

TELECOMMUNICATIONS TECHNOLOGY

DEPT. 56

This program is designed to provide students with an excellent opportunity to pursue a viable career in mass media communications. Graduates of this program will qualify for production, programming, or managerial positions in local radio and television stations and cable television stations, and in industry, education and medicine where television is utilized.

Minimum Grade Requirement: The minimum grade for major courses in the Telecommunications Technology program is "C". All students must maintain a "C" plus average in order to be awarded a degree in Production Technician.

SEMESTER 1

| No. | Course Title | Class | Lab | Credits |
|------|-------------------------------------|-------|-----|---------|
| 6275 | Introduction to Television | 3 | | 3 |
| 6276 | Communication in Today's World | 3 | | 3 |
| 4086 | Introduction to Psychology | 3 | | 3 |
| 6277 | Uses of TV in Educ., Indus., & Med. | 3 | | 3 |
| 1110 | Fundamentals in TV Writing | 3 | 2 | 4 |
| | | 15 | 2 | 16 |

SEMESTER 2

| No. | Course Title | Class | Lab | Credits |
|------|----------------------------------|-------|-----|---------|
| 1109 | Principles of TV Writing | 3 | | 3 |
| 4008 | Introduction to Sociology | 3 | | 3 |
| 6278 | TV Prod. and Directing | 3 | | 3 |
| 6279 | Speaking on TV | 3 | | 3 |
| 6280 | Analy. of Commercial & Public TV | 3 | | 3 |
| | | 15 | | 15 |

SEMESTER 3

| No. | Course Title | Class | Lab | Credits |
|------|---|-------|-----|---------|
| 6320 | Instructional TV Techniques | 3 | | 3 |
| 6321 | TV Journalism | 3 | 3 | 4 |
| 6322 | TV Prod. Practicum | | 6 | 3 |
| 4014 | Introduction to Economics | 3 | | 3 |
| 4093 | Industrial Psychology | 3 | | 3 |
| | | 12 | 9 | 16 |
| 6333 | *Television Honors (Optional for those who qualify) | 4 | | 4 |

SEMESTER 4

| No. | Course Title | Class | Lab | Credits |
|---------|---|-------|-----|---------|
| 6323 | Adv. Instr. Television | 3 | 1 | 3 |
| 6324 | Adv. TV Journalism | | 5 | 2 |
| 6330 | Adv. TV Prod. Practicum | | 6 | 3 |
| 6331 | Business Management Techniques | 3 | | 3 |
| 6332 | Cable Television | 3 | | 3 |
| | | 9 | 12 | 14 |
| 6334 | *Television Honors (Optional for those who qualify) | 4 | | 4 |
| 6343 | Broadcasting Management 1 | | | 3 |
| 6344 | Broadcasting Management 2 | | | 3 |
| 6347 | Broadcast Technical Operations & Prod. 1 | | | 3 |
| 6348 | Broadcast Technical Oper. & Prod. 2 | | | 3 |
| CE 6349 | Video Production 11 | | | 3 |

1110 - FUNDAMENTALS IN TV WRITING 4 credits

In this course students learn the fundamental principles of writing for television. Writing for drama, commercials, news, public affairs are covered. Students are taught how to write straight, still picture and moving picture copy. The traditional video cues for directors are also taught. Students in this course do a considerable amount of writing.

6275 - INTRODUCTION TO TELEVISION PRODUCTION 3 credits

This course will provide an overview of what is entailed in producing programs. The logistics, economics, traffic, direction, writing, stage management and hardware manipulation involved in TV production will be covered. In this course the student should begin to gain some objective idea as to where his strengths and weaknesses lie in TV production.

6276 - COMMUNICATING IN TODAY'S WORLD 3 credits

In this course the wide spectrum of communications — from interpersonal to space communications satellite — is explored. The question as to how good human relations helps to develop good TV programming is examined. The course also deals with the nature of television, exposing its acknowledged attributes. Understanding the nature of TV can help a professional channel the power of television in directions that will help and not hurt viewers. It is hoped those who take this course will develop a respect for TV's potential power.

6277 - USES OF TV IN EDUCATION, INDUSTRY & MEDICINE 3 credits

In this course the student learns that TV production is not limited to VHF, UHF and network programming. It acquaints the student with educational, industrial and medical television. The fundamentals and principles of producing TV programming for those areas are explored. Simple productions in the three areas are produced in class. Students are exposed to speakers from the three areas.

6278 - TV PRODUCING AND DIRECTING 3 credits

A course dealing with the principles of producing and directing. The responsibilities of the producer are explored. So are those of the Director. How both operate within the outside a TV studio is covered. Special exercises are given to the students in order to sharpen their producing and directing reflexes. Midway through the course, the students are given a script to produce and direct as a video tape production. There will be student critiquing of every production.

6279 - SPEAKING ON TV 3 credits

Essentially a speech course, but geared to television presentation. The student learns how to communicate to an audience while on camera. Doing commercials, the news, interviewing, hosting panels are stressed. The micro teaching method is employed to evaluate each student's performance.

6280 - ANALYSIS OF COMMERCIAL & PUBLIC TV 3 credits

This course explores the anatomy of both commercial and public television, checking out their history, their societal commitments, how they function and how they subsist. Their difference and similarities are exposed. Some practical tips as to how to succeed in both sectors are offered.

6320 - INSTRUCTIONAL TELEVISION TECHNIQUES 3 credits

In this course, students learn the fundamentals of producing, writing and directing instructional TV material. The mistakes often made by entertainment TV producers who venture into instructional TV are isolated and examined. Students produce one TV instructional program for either education, industry or medicine. Successful production produced in three areas are studied.

6321 - TV JOURNALISM 4 credits

The fundamentals in editing (assignment development and newscast production), writing and rewriting, producing are stressed. So is learning how to capture news with film and video tape. Reporting and interviewing exercises are offered. Students produce a weekly TV newscast which is fed through Building 20 closed circuit system. Through this course students learn to compile information and collate it, unearth evidence and appraise it, budget their time and energy and develop an appreciation for accuracy. This is a lab course.

6322 - TV PRODUCTION PRACTICUM 3 credits
This course is taken at WGBY-TV (on campus): Students work studio cameras, learn to operate video tape machine, work on console board, learn to operate slide and film chain machines. The station's professional staff teaches this course.

6333 & 6334 - TV HONORS (2 courses) 4 cr. each
This course is open to eight students. They produce video tapes prepared by faculty. The students are divided into two groups of four each. Each group constitutes a production team. They produce two instructional TV presentations a week. During the semester each member of a team has experience working as a producer-director, cameraperson, floor manager. The groups are responsible for dubbing, filing finished productions. The presentations are produced at STCC's TV center. To qualify for this course, a student must have an A or B+ in his major.

6323 - ADVANCED INSTRUCTIONAL TV 3 credits
In this course, a student finds an educational, industrial or medical institution that does not use instructional TV — but which can benefit from it. The student must explain in writing how instructional TV would benefit the institution. He/She

also drafts a sample TV script of a program that can help that institution. Their scripts are sent to their selected institution. Each student spends 12 hours working at the Massachusetts Mutual Life TV studio.

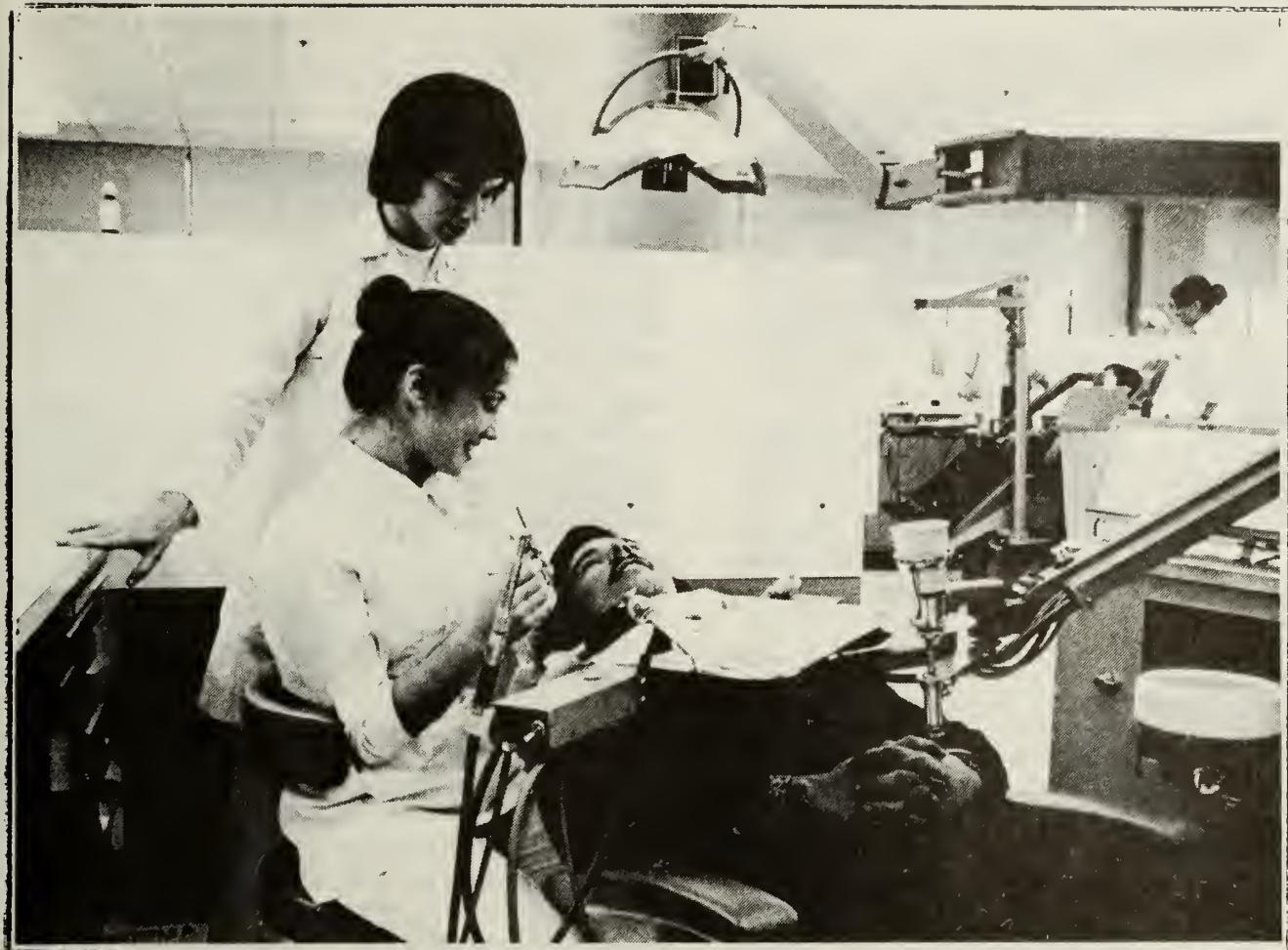
6324 - ADVANCED TV JOURNALISM 2 credits
Each student spends five hours a week working as a news assistant for the local TV news departments (Channels 24, 40, 57, possible 3). The students put in apprentice time and do some writing, reporting, field camera work and film editing.

6330 - ADVANCED TV PRODUCTION 3 credits
Working as a production assistant on WGBY's regular TV shows, or working in a similar capacity at channels 22 and 40. A five hour course.

6332 - CABLE TELEVISION 3 credits
A course dealing with the history, business, technical structure of CATV. It deals also with the programming potential of cable TV and how it can serve a community. Leading CATV figures address the class. Students learn what kind of programming approach is best for CATV. The differences in broadcasting and cable TV programming approach are explored.



health education/ human services



COSMETOLOGY/COSMETOLOGY MANAGEMENT

Rapid technological changes have altered the occupational role of the individual employed in the field of cosmetology and have necessitated reappraisal of the training, education and personal qualifications necessary to meet the higher standards

of performance presently demanded. To be eligible to take cosmetology, a student must be a high school graduate, 16 years of age or older, with a satisfactory medical report and with sufficient school and character references. Upon successful completion of 1000 hours of training in a 9-month period required by the Massachusetts Board of Cosmetology, the student is ready to take the National Board Examination. To qualify for a license, the cosmetologist must pass an examination in both theory and practice.

Cosmetologists provide a variety of beauty services, most of which are related to the care of hair. They shampoo, cut, set, style, straighten, bleach and tint hair and give permanent waves. They also may give manicures, scalp and facial treatments, provide make-up analysis, shape eyebrows and clean and style wigs and hairpieces. Other duties include making appointments for patrons, cleaning their equipment and sanitizing implements.

Numerous job opportunities exist for graduates of the Cosmetology Assistant Program. Employers today, however, demand more than technical proficiency. Reliability, dedication to duty and good health are also required.

Minimum Grade Requirement: Practical work, tests and examinations for graduation: C. Student must complete 1000 hours of work within nine months with a grade of C or better for the State Board review.

SEMESTER 1

| No. | Course Title | Class | Lab | Credits |
|------|----------------------------------|-------|-----|---------|
| 5028 | Beauty Salon Management | 3 | | 3 |
| 7050 | Principles of Cosmetology Theory | 3 | | 3 |
| 7051 | Fund. of Applied Cosmetology 1 | 1 | 12 | 5 |
| 7052 | Fund. of Applied Cosmetology 2 | 1 | 12 | 5 |
| | | 8 | 24 | 16 |

SEMESTER 2

| No. | Course Title | Class | Lab | Credits |
|------|----------------------------|-------|-----|---------|
| 4073 | Human Relations at Work 3 | 3 | | 3 |
| 7048 | Basic Dermatology | 2 | | 2 |
| 7055 | Supervised Lab Practicum 1 | 1 | 12 | 5 |
| 7056 | Supervised Lab Practicum 2 | 1 | 12 | 5 |
| | | 7 | 24 | 15 |

COSMETOLOGY MANAGEMENT

SEMESTER 1

| No. | Course Title | Class | Lab | Credits |
|------|----------------------------------|-------|-----|---------|
| 5028 | Beauty Salon Management | 3 | | 3 |
| 7050 | Principles of Cosmetology Theory | 3 | | 3 |
| 7051 | Fund. of Applied Cosmetology 1 | 1 | 12 | 5 |
| 7052 | Fund. of Applied Cosmetology 2 | 1 | 12 | 5 |
| | | 8 | 24 | 16 |

SEMESTER 2

| No. | Course Title | Class | Lab | Credits |
|------|----------------------------|-------|-----|---------|
| 4073 | Human Relations at Work 3 | 3 | | 3 |
| 7048 | Basic Dermatology | 2 | | 2 |
| 7055 | Supervised Lab Practicum 1 | 1 | 12 | 5 |
| 7056 | Supervised Lab Practicum 2 | 1 | 12 | 5 |
| | | 7 | 24 | 15 |

SEMESTER 3

| No. | Course Title | Class | Lab | Credits |
|------|-------------------------|-------|-----|---------|
| 1004 | English Composition 1 | 3 | | 3 |
| | Mathematics | 3 | | 3 |
| 4086 | General Psychology | 3 | | 3 |
| 5022 | College Accounting 1 | 3 | | 3 |
| 5059 | Principles of Marketing | 3 | | 3 |
| | | 15 | | 15 |

SEMESTER 4

| No. | Course Title | Class | Lab | Credits |
|-----|--------------|-------|-----|---------|
| | | | | |

| | | | |
|------|-------------------------------|----|----|
| 1007 | Fundamental of Speech | 3 | 3 |
| 4014 | Economics 1 | 3 | 3 |
| 5029 | Small Business Management | 3 | 3 |
| 7060 | Advanced Hairstyling | 3 | 3 |
| 5228 | Small Business Personnel Mgt. | 3 | 3 |
| | | 15 | 15 |
| | | 2 | 2 |
| | | | 15 |

5028 - BEAUTY SALON MANAGEMENT

3 credits

An analysis and examination of management practices applicable to the beauty salon which includes telephone techniques, salesmanship and record keeping. Students also learn techniques of planning the physical layout and effective decorating of the beauty salon to comply with state board regulations.

5029 - SMALL BUSINESS MANAGEMENT

3 credits

A basic course dealing with the fundamental principles and techniques underlying the managerial process in small business management. Topics include marketing, finance, production and personnel policies. Case studies and problems are part of the course.

7048 - BASIC DERMATOLOGY

2 credits

Basic knowledge in the classes of diseases, allergies, terminology, primary and secondary lesions, disease of hair, glands and abnormalities of nails. The need for professional cooperation is stressed.

7050 - PRINCIPLES OF COSMETOLOGY THEORY

3 credits

An introduction to cosmetic chemistry and anatomy and physiology essential in keeping with the professional standards relating to grooming, posture and hygiene.

7051 - FUNDAMENTALS OF APPLIED COSMETOLOGY 1

5 credits

Included in this course are the techniques of pin curling, finger waving, hair cutting, permanent waving, shampooing, facial and scalp manipulations. Techniques of sanitation and sterilization through practical experience is taught.

7052 - FUNDAMENTALS OF APPLIED COSMETOLOGY 2

5 credits

A continuation of course number 7051 including shampooing, manicuring, hair coloring, hair relaxing, thermal waving, eyebrow arching, make-up and facial treatments.

7055 - SUPERVISED LAB PRACTICUM 1

5 credits

Practical experience is gained as a result of students working on each other under direct supervision.

7056 - SUPERVISED LAB PRACTICUM 2

5 credits

A continuation of course number 7055 involving role-playing by the students in a laboratory setting under direct supervision.

CE7060 - ADVANCED COSMETOLOGY

3 credits

Restricted to the licensed cosmetologist, this course deals specifically with the latest trends in precision hair cutting, styling and blow drying, permanent waving and high fashion hair coloring. The students must supply their own live models during lab practice.

DENTAL ASSISTING

DEPT. 41

The Dental Assisting Department strives to educate students in all phases of dental assisting, including business, chairside, and laboratory procedures. The preparation is accomplished through lectures, discussions, seminars, laboratory, and clinical sessions, as well as a supervised affiliation program which is conducted off campus.

Applicants must have an academic background in English, biology, mathematics, and typing. The Scholastic Aptitude Test must be taken. A college preparatory course in high school and an average academic rank in the upper 1/2 of the graduating class are also highly recommended. A personal interview with the department chairman is required.

The Dental Assisting Program has two primary objectives: to prepare students for employment as dental assistants after graduation and to prepare and motivate students to continue their dental education by obtaining a degree in dental hygiene, or a baccalaureate degree. Advanced degrees will enable the qualified student to participate in broader areas of the dental specialties.

The Dental Assisting curriculum conforms to the standards that are required by the Accreditation Committee. Graduates are eligible to take the National Certification Examination.

The minimum grade requirement for the Dental Assisting Program is a grade of "C" (2.0) in each course.

college does not have a dental school with which to affiliate, this portion of her training is accomplished through the continued interest and cooperation of our area dental society. At this time, the student should be able to expand her dental assisting education and improve her skills and techniques under the direct supervision of the dentists.

7084 - DENTAL ANATOMY 2 credits

A basic study of the teeth, oral cavity, head and neck. Emphasis on nomenclature, dento-osseous structures, nerves, blood vessels, and muscles. Lecture, models, slides, and transparencies utilized to reinforce anatomical concepts.

7082 - DENTAL MATERIALS 3 credits

The chemical and physical properties of materials used to restore teeth are studied. Laboratory practice is provided to teach the manipulation of amalgam, waxes, stone, plaster and other materials used in dentistry.

7023 - DENTAL ASSISTING TECHNIQUES 1 3 credits

This course combines lectures, demonstrations and student participation in the care and use of all types of dental instruments. Aseptic techniques, including an understanding of the principles of microbiology and sterilization, are also emphasized in this introductory course. A two-hour laboratory is taught in conjunction with this course. At that time the student is familiarized with the practical aspects of microbiology, sterilization and instrumentation.

5006 - DENTAL RECORDS 3 credits

This is a one semester course designed primarily for the dental assistant. This course covers basic business procedures which are essential to the effective management and control of the dental office. Business skills are reviewed and developed for practical application in the office. Included are procedures in filing, banking, billing, managing the appointment book, organizing a preventive recall system, insurance, tax forms, and all types of financial transactions which might be found in the dental practice. The student is also familiarized with dental charting procedures and telephone techniques.

4086 - GENERAL PSYCHOLOGY 3 credits

An introductory course designed to provide students with a general knowledge of the concepts and methods of psychology. Topics considered include the development of behavior, sensation, learning, motivation, intelligence, attitudes, personality and emotion.

7024 - DENTAL ASSISTING TECHNIQUES 2 3 credits

A continuation of the first semester, this course seeks to advance the skill and dexterity of the student in all techniques. There is a coordination of activities in an effort to combine efficient chairside performance with general dental assisting tasks. The student will also receive lectures on ethics and jurisprudence as they pertain to the practice of dentistry. Guest speakers will be utilized to help the instructors relate this information to the student.

7026 - DENTAL SCIENCES 2 2 credits

A continuation of first semester, this course also includes background in pharmacology, office emergencies and first aid.

SEMESTER 1

| No. | Course Title | Class | Lab | Credits |
|------|-------------------------------|-------|-----|---------|
| 1004 | English Composition 1 | 3 | | 3 |
| 7025 | Dental Sciences 1 | 3 | | 3 |
| 7083 | Dental Radiology | 1 | 2 | 2 |
| 7084 | Dental Anatomy | 2 | | 2 |
| 7082 | Dental Materials | 1 | 2 | 3 |
| 7023 | Dental Assisting Techniques 1 | 2 | 2 | 3 |
| 5006 | Dental Records | 3 | | 3 |
| | | 15 | 7 | 19 |

SEMESTER 2

| No. | Course Title | Class | Lab | Credits |
|------|---------------------------------|-------|-----|---------|
| 4086 | General Psychology | 3 | | 3 |
| 7024 | Dental Assisting Techniques 2 | 2 | 2 | 3 |
| 7026 | Dental Sciences 2 | 2 | | 2 |
| 1007 | Fundamentals of Speech | 3 | | 3 |
| 7065 | Super. Clinical Experiences 411 | | 16 | 4 |
| | | 10 | 18 | 15 |

7025 - DENTAL SCIENCES 1 3 credits

This course is primarily designed to educate the student in all phases of Nutrition and Oral Health. This course is intended to familiarize the student with basic nutritional deficiencies and oral diseases that the dental patient may experience. Dietary information is also included for the students' everyday needs.

7083 - DENTAL RADIOLOGY 2 credits

As an important segment in the dental assistant's training, this course includes the theoretical background of radiation production as well as various techniques of exposure, processing and interpretation of radiographic findings. Safety precautions are stressed as the student learns intra-oral techniques through lecture, slides, visual aids, demonstrations and practice on manikins and patients.

7065 - SUPERVISED CLINICAL EXPERIENCE 411 4 credits

During this phase of the student's education, she is encouraged to participate actively in many of the functions and responsibilities that are found in the dental office. Since this

DENTAL HYGIENE

DEPT. 63

The Dental Hygiene program seeks to educate men and women who are able to function as competent dental hygienists to provide preventive oral health services for the public in private dental offices, clinics and schools. The graduates will be prepared for entrance to the National Board Examination in Dental Hygiene as well as for State Board Examinations which together lead to licensure to practice. Immediate employment will be available upon graduation and the opportunity for further education at the baccalaureate level is also possible.

Applicants must have an academic background in biology, chemistry and mathematics. The Scholastic Aptitude Test (SAT) must be taken and score totalling 900 must be achieved. The Dental Hygiene Aptitude test must also be taken. A college preparatory course in high school and academic rank in the upper 1/4 of the graduating class are also necessary. A personal interview is recommended.

The Dental Hygiene department has two primary aims: to prepare students for employment as dental hygienists immediately after graduation and to prepare and motivate students to continue their education in the field of dental hygiene by obtaining the baccalaureate degree. Advanced degrees will enable participation in broader areas of dental hygiene.

All courses listed in the curriculum are required for graduation from the Dental Hygiene program.

The minimum grade requirement for the Dental Hygiene program is a grade of "C" (2.0) in each course.

SEMESTER 1

| No. | Course Title | Class | Lab | Credits |
|------|--------------------------|-------|-----|---------|
| 3138 | Physio-Chemistry | 3 | | 3 |
| 1004 | English Composition 1 | 3 | | 3 |
| 3091 | Anatomy & Physiology 1 | 3 | 2 | 4 |
| 7120 | Oral Anatomy | 2 | 4 | 3 |
| 7121 | Intro. to Dental Hygiene | 2 | 4 | 3 |
| 7136 | Dental Radiology | 1 | 3 | 2 |
| | | 14 | 13 | 18 |

SEMESTER 2

| No. | Course Title | Class | Lab | Credits |
|------|-------------------------------------|-------|-----|---------|
| 1005 | Composition 2: Intro. to Literature | 3 | | 3 |
| 7125 | Nutrition | 2 | | 2 |
| 3028 | Microbiology | 3 | 3 | 4 |
| 7128 | Oral Pathology & Histology | 3 | | 3 |
| 3092 | Anatomy & Physiology 2 | 3 | 3 | 4 |
| 7129 | Clinical Dental Hygiene 1 | 1 | 6 | 3 |
| | | 15 | 12 | 19 |

SEMESTER 3

| No. | Course Title | Class | Lab | Credits |
|------|---------------------------|-------|-----|---------|
| 4086 | General Psychology | 3 | | 3 |
| 7131 | Pharmacology | 2 | | 2 |
| 7126 | Periodontology | 2 | | 2 |
| 7127 | Dental Materials | 1 | 3 | 2 |
| 7132 | Dental Specialties | 2 | | 2 |
| 7133 | Clinical Dental Hygiene 2 | 1 | 12 | 5 |
| | | 11 | 15 | 16 |

SEMESTER 4

| No. | Course Title | Class | Lab | Credits |
|------|--------------------------------|-------|-----|---------|
| 7138 | Dental Hygiene Practice Mgt. | 2 | | 2 |
| 7139 | Expanded Functions/Dental Hyg. | 2 | 2 | 3 |
| 1007 | Fundamentals of Speech | 3 | | 3 |
| 4008 | Intro. to Sociology 1 | 3 | | 3 |
| 7134 | Clinical Dental Hygiene 3 | 1 | 12 | 5 |
| 7130 | Community Dental Health | 3 | | 3 |
| | | 14 | 14 | 19 |

1081* - PRACTICAL MEDICAL SPANISH FOR ENGLISH SPEAKERS

1-3 credits

Students whose major is in any one of the Health Divisions will become acquainted with basic medical terminology in the Spanish language. They will become familiar and conversant

with questions, terminology and communication problems common to the medical profession in helping Spanish-speaking patients.

3138 - BIO-CHEMISTRY FOR THE HEALTH SCIENCES

3 credits

An introduction to biochemical principles. Emphasis is on the major metabolic pathways, the mechanisms of enzyme action, bioenergetics and the role of hormones and other regulatory substances. This course is restricted to students in the Dental Hygiene program. PREREQUISITES: General Biology, Chemistry or permission of instructor.



7120 - ORAL ANATOMY

3 credits

Study of the structural composition and physiological activities of the teeth, oral cavity, head and neck. Emphasis on nomenclature, dento-osseous structures, nerves, blood vessels and muscles. Lectures, demonstrations, programmed instruction and laboratory exercises designed to enhance the application of anatomical principles and concepts to the practice of dentistry and dental hygiene.

7121 - INTRODUCTION TO DENTAL HYGIENE

3 credits

Lectures and preclinical laboratory sessions are presented to introduce the etiology and prevention of dental diseases, normal oral conditions and common deviations, theory and practice in specific clinical techniques in the practice of dental hygiene. Lectures, laboratory and preclinical sessions are coordinated.

7125 - NUTRITION

2 credits

Basic principles and concepts of nutrition studied with emphasis on relation to oral health, caries control and general health. Orientation to counseling techniques for diet modification in the practice of preventive dentistry. PREREQUISITE: 3138.

7126 - PERIODONTOLOGY

2 credits

This course is an introduction to periodontology, covering etiology, prognosis and treatment of the periodontally involved patient. Techniques of history taking and oral inspection will be discussed. The role of the dental hygienist in patient education and preventive dentistry will be stressed. PREREQUISITE: 7120, 7121.

7127 - DENTAL MATERIALS

2 credits

The chemical and physical properties of materials used to

restore teeth are studied. Laboratory practice is provided to teach the manipulation of amalgam, waxes, stone, plaster and other materials used in dentistry. PREREQUISITE: 3138.

7128 - HISTOLOGY & ORAL PATHOLOGY 3 credits
A study of the cells, tissues and other microscopic elements that compose the oral cavity. Embryological development of oral structures will be considered. The fundamentals of the disease process and pathologic conditions of the oral cavity will be studied. PREREQUISITE: 7120.

7129 - CLINICAL DENTAL HYGIENE 1 3 credits
A continuation of Introduction to Dental Hygiene with supervised clinical experience. The student will be given the opportunity to render primary preventive oral health care at the S.T.C.C. dental facilities and extra-mural sites. One hour lecture, six hours clinic. PREREQUISITE: 7121, 7120.

7130 - COMMUNITY DENTAL HEALTH 3 credits
A series of lectures and a coordinated field project designed to introduce the student to the dental needs of the community. Students propose, plan and participate in a community dental service project which is designed to assist a community organization with dental health care. Lectures are concerned with dental health education, epidemiology, dental public health, fluoridation and dental manpower.

7131 - PHARMACOLOGY 2 credits
Study of drugs and their effects on living tissues. Emphasis will be placed on the drugs which are utilized in dentistry. Dosage, physical and chemical properties and modes of administration will be considered. PREREQUISITE: 3138, 7120.

7132 - DENTAL SPECIALTIES 2 credits
Introduction to the principles and practices of the major specialties in dentistry. Orthodontics, Oral Surgery, Endodontics will be among the areas studied.

7133,7134 - CLINICAL DENTAL HYGIENE 2 & 3 4/4 cr.
Continued practice in oral prophylaxis techniques and patient education. Completion of supportive service skills such as polishing amalgam restorations, radiographs, nutritional counseling, periodontal charting, etc. are required. In addition to assignments at the college dental hygiene clinic, the student will practice her/his skills in several extra-mural sites in the community. Attendance at weekly seminars required. PREREQUISITE: 7120,7121.

7136 - DENTAL RADIOLOGY 2 credits
A survey of dental radiology, this course includes the theoretical background of techniques of exposure, processing, recognition of dental structures and principles of radiographic interpretation. Panoramic radiography is introduced.

7138 - DENTAL HYGIENE PRACTICE MANAGEMENT 2 credits
Lectures and discussions concerning the management of a private dental practice, development and philosophy of preventive plaque control programs, use of office records and importance of ethics and jurisprudence. Emphasis is placed on the role of the dental hygienist in a private practice situation.

7139 - EXPANDED FUNCTIONS FOR THE DENTAL HYGIENIST 3 cr.
This course is designed to provide the student with background information and techniques utilized in providing expanded duties. Emphasis will be on operative dentistry procedures, diagnostic aids, study model preparations, clinical and supportive treatment anesthesia.

*This course is not reflected in the course curriculum; it is presently under revision. See Department Chairwoman.
CE before a course indicates: Continuing Education (offered currently only in the Evening Division).



EARLY CHILDHOOD EDUCATION

DEPT. 81

Designed to meet the ever-expanding needs for trained personnel in the field of early learning and child care, the Early Childhood Education Program provides both general education studies and specific skills gained through class and laboratory experiences.

Early Childhood students must earn a 2.0 quality point average (C) for each major course offering within the program. Graduates of the two-year program will be prepared to assist teachers and other professionals in nonpublic, early environments such as infant care centers, nursery schools, private kindergartens, health care agencies, institutions and other schools and organizations offering early learning programs and/or child care services. The trained assistant will play an important role as a supportive member of the professional team involved in the daily care, development and education of the young child. Applicants for admission to this program must be high school graduates or equivalent. The SAT's must be taken.

SEMESTER 1

| No. | Course Title | Class | Lab | Credits |
|------|-------------------------------|-------|-----|---------|
| 1004 | English Composition 1 | 3 | | 3 |
| 3085 | Natural History | 3 | 2 | 4 |
| 7101 | Intro. to Early Childhood Ed. | 3 | | 3 |
| 7102 | Child Growth & Development | 3 | | 3 |
| 8095 | Music for Early Childhood Ed. | 3 | | 3 |
| 7115 | Early Childhood Fieldwork 1 | | 3 | 1 |
| | | 15 | 5 | 17 |

SEMESTER 2

| No. | Course Title | Class | Lab | Credits |
|------|-----------------------------------|-------|-----|---------|
| 1005 | Comp. 2: Intro. to Literature | 3 | | 3 |
| 4086 | General Psychology | 3 | | 3 |
| 7103 | Theories of Learn. & Person. Dev. | 3 | | 3 |
| 7104 | Curriculum for Open Education 1 | 3 | | 3 |
| 4008 | Introduction to Sociology 1 | 3 | | 3 |
| 7116 | Early Childhood Fieldwork 2 | | 3 | 1 |
| | | 15 | 3 | 16 |

SEMESTER 3

| No. | Course Title | Class | Lab | Credits |
|------|------------------------------------|-------|-----|---------|
| 1007 | Fundamentals of Speech | 3 | | 3 |
| 4009 | Introduction to Sociology 2 | 3 | | 3 |
| 7106 | Survey of Curr. Early Learn. Prog. | 3 | | 3 |
| 7107 | Obser. and Recording of Child Beh. | 1 | 9 | 4 |
| 7105 | Curr. for Open Education 2 | 3 | 3 | 4 |
| | | 13 | 12 | 17 |

SEMESTER 4

| No. | Course Title | Class | Lab | Credits |
|------|-------------------------------|-------|-----|---------|
| 7112 | Child Health and Nutrition | 3 | | 3 |
| 7109 | Supervised Student Practicum | | 18 | 6 |
| 7110 | Seminar and Critique | 3 | | 3 |
| 8101 | Early Childhood Art Education | 3 | | 3 |
| | | 9 | 18 | 15 |

CE 7101 INTRODUCTION TO EARLY CHILDHOOD EDUCATION

3 credits

Introduction to Early Childhood Education is designed to acquaint students with the philosophy, history and methodology of early learning programs. Within the scope of the course, students will study the general components of a good early learning program, techniques for improving learning, problems of educational environments, including those of programs for disadvantaged children and parent involvement and the role of the teacher.

7102 - CHILD GROWTH AND DEVELOPMENT

3 credits

Provides the student with basic theories and research in growth and development. The course covers study of the individual from conception through early elementary school years in the areas of physical, emotional, social, cognitive, linguistic and personality development.

7103 - THEORIES OF LEARNING & PERSONALITY DEVELOPMENT

3 credits

Provides an examination of the cognitive and affective theories

of Jean Piaget and Erik Erikson. Also studied are issues in contemporary learning and education.

7104 - CURRICULUM FOR OPEN EDUCATION 1 3 credits
Provides the students with integrated experiences in applied early learning through lecture, discussion and workshops in movement, dramatics, art, science and math. Students are helped to discover their own creative resources.
PREREQUISITE: 7101.

7105 - CURRICULUM FOR OPEN EDUCATION 2 4 credits
Provides the student with integrated experiences in applied early learning through lecture, discussion and workshops in literature, story-telling, language development, reading and the techniques and uses of audio-visual aids as they enrich the integrated curriculum. The role of the adult in providing early learning experiences that foster self-directiveness and self-expressiveness in children is emphasized.
PREREQUISITES: 7101, 7104.

7106 - SURVEY OF CURRENT EARLY LEARNING PROGRAMS

3 credits

Offers the student a survey of current programs in the field of early learning and examines their underlying rationale. Emphasis is placed on an eclectic approach to select the appropriate aspects of each program to meet the developmental needs of individual children.
PREREQUISITES: 7101, 7102 and 7103.

CE 7107 OBSERVATION & RECORDING OF CHILD BEHAVIOR

4 credits

Provides the student with an opportunity to increase their objectivity and proficiency in observing and interpreting children's behavior. Lecture will comprise 25% of credit time and 75% will be spent rotating among 3 field placements.
PREREQUISITE: 7103, 7104.

7109 - SUPERVISED STUDENT PRACTICUM

6 credits

Supervised field experience in selected facilities planned in cooperation with community agencies and schools. Placements are for eighteen hours per week: two placements of eight weeks duration each. The Practicum is taken in conjunction with Seminar and Critique, 7110. **PREREQUISITE:** 7101 and 7107 inclusive.

7110 - SEMINAR AND CRITIQUE

3 credits

Provides for systematic evaluation of the total program as it relates to the individual student. Research and discussion center on methods, materials and content of early learning and include the role and responsibilities of professional and semi-professional personnel. Experiences encountered in student practicum placements are the basic for discussion. Taken simultaneously with 7109. **PREREQUISITE:** 7101 and 7107 inclusive.

CE 7112 - CHILD HEALTH & NUTRITION

3 credits

Provides the student with basic information pertaining to development of good health habits in children, childhood diseases, preventive procedures, care of the handicapped child, the various health agencies working with children, human nutrition, the nutritional value of food and the relationship of food habits to the health and education of young children. Safety measures and first aid are also considered.

7115-7116-FIELD STUDY 1 & 2

2 credits

Three hours per week of supervised field placements in community agencies and schools during each semester the freshman year in the Early Childhood Assistants Program.

MEDICAL ASSISTANT

DEPT. 42

The two-year program prepares students to meet the rigorous demands of today's practicing physician and his need for a skilled Medical Assistant to handle the increasing administrative and technical details of his medical practice. General education and technical studies prepare the Medical Assistant to perform at various levels of career interest, knowledge and skills.

An opportunity for a unit of supervised clinical experience in cooperating health agencies is provided during the fourth semester.

Graduates are qualified to accept positions in medical offices, hospitals, or other community health service agencies.

For students seeking a job entry career, the option for a one-year certificate program will provide an opportunity for placement in medical settings requiring knowledge of routine office procedures.

Minimum Grade Requirement: To continue in the progression of courses offered in the Medical Assisting Program, a student must obtain a grade of "C" (73%) or better in the following courses: 7027-Medical Assistant Techniques 1, 7028-Medical Assistant Techniques 2, 7085-Medical Assistant Techniques 3 and 7080-Medical Assistant Seminar & Field Work.

patients. Traditional ethical questions are explored together with those arising coincident with changing medical practices and public attitudes.

7027 - MEDICAL ASSISTANT TECHNIQUES 1 3 credits
Presents theory and planned student activity in medical assisting techniques, skills and includes medical terminology.

7028 - MEDICAL ASSISTANT TECHNIQUES 2 4 credits
Continuation of advanced theory. Selected laboratory procedures will include electrocardiogram, cardiopulmonary resuscitation and other first aid procedures.

7043 - PROGRAMMED MEDICAL TERMINOLOGY 3 credits

This course is designed to be used on an individually paced basic, emphasizing the most commonly used combining forms, prefixes and suffixes that make up the language of medicine. The text will be supplemented with audio cassettes. A working knowledge of medical terminology is desirable for anyone entering one of the Allied Health occupations or related fields where precise use of medical terms are required.

7080 - MEDICAL ASSISTANT SEMINAR & FIELD WORK 5 credits

General introduction to hospitals and health-care agencies provides students with additional experience in applying cognitive learning to practical applications.

7085 - MEDICAL ASSISTANT TECHNIQUES 3 5 credits

This course is designed to help the student reach a better understanding and help in the development of advanced skills in medical assisting techniques by assignment to field experiences in hospitals and clinical agencies under supervision.

*SEMESTER 1

| No. | Course Title | Class | Lab | Credits |
|------|--------------------------------|-------|-----|---------|
| 1004 | English Composition 1 | 3 | | 3 |
| 3077 | Human Biology 1 | 3 | 2 | 4 |
| 7027 | Medical Assistant Techniques 1 | 5 | 3 | 4 |
| 5008 | Typewriting 1 | 5 | | 3 |
| 5031 | Medical Law and Ethics | | | 1 |
| 4086 | General Psychology | 3 | | 3 |
| 7043 | Programmed Medical Terminology | 3 | | 3 |
| | | 22 | 5 | 21 |

*SEMESTER 2

| No. | Course Title | Class | Lab | Credits |
|------|-------------------------------------|-------|-----|---------|
| 1005 | Composition 2: Intro. to Literature | 3 | | 3 |
| 3078 | Human Biology 2 | 3 | 2 | 4 |
| 5012 | Medical Typewriting | 2 | 3 | 3 |
| 7028 | Medical Assistant Techniques 2 | 5 | 3 | 4 |
| 5005 | Medical Records | 3 | | 3 |
| | | 16 | 8 | 17 |

*1-year Certificate Program

SEMESTER 3

| No. | Course Title | Class | Lab | Credits |
|------|--------------------------------|-------|-----|---------|
| 1080 | Practical Med. Spanish | 3 | | 3 |
| 5014 | Medical Office Practice 1 | 3 | | 3 |
| 7085 | Medical Assistant Techniques 3 | 4 | 2 | 3 |
| | Elective | 3 | | 3 |
| | | 13 | 2 | 12 |

SEMESTER 4

| No. | Course Title | Class | Lab | Credits |
|------|----------------------------------|-------|-----|---------|
| 1006 | Business English | 3 | | 3 |
| 4085 | Child & Developmental Psychology | 3 | | 3 |
| 5129 | Medical Machine Transcription | 1 | | 1 |
| 7080 | M.A. Seminar & Field Work | 1 | 14 | 9 |
| | | 8 | 14 | 16 |

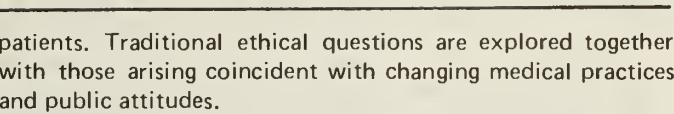
1080 - PRACTICAL MEDICAL SPANISH FOR ENGLISH

SPEAKERS 1-3 credits
Students whose major is in any one of the Health Divisions will become acquainted with basic medical terminology in the Spanish language. They will become familiar and conversant with questions, terminology and communication problems common to the medical profession in helping Spanish-speaking patients.

5031 - MEDICAL LAW AND ETHICS

1 credit

The application of law in real work situations encountered by medical personnel. Responsibilities and liabilities of health providers are balanced against the rights and expectations of



MEDICAL LABORATORY TECHNICIAN

DEPT. 43

This program offers an integrated curriculum which provides the student with a background in general education and the basic skills necessary to function in a clinical laboratory. Fundamentals in clinical microscopy, microbiology, hematology, immunohematology and clinical chemistry comprise the core curriculum which terminates in a twenty week hospital affiliation. Presently the affiliation period extends from April through August of the senior year. The minimum passing grade for the required courses is "C."

Applicants must have completed a college preparatory course in high school which included biology, chemistry, and mathematics. SAT scores must be 400 or greater in mathematics and verbal skills with a total score of 800 or more. Graduates of the program are eligible to take the national registry examination for medical laboratory technicians sponsored by the American Society of Clinical Pathologists.

The program is so designed that they may continue at a baccalaureate level in a four year institution.

Minimum Grade Requirement: The minimum passing grade for the required courses in the Medical Laboratory Technician Program is "C."

SEMESTER 1

| No. | Course Title | Class | Lab | Credits |
|------|-----------------------|-------|-----|---------|
| 1004 | English Composition 1 | 3 | | 3 |
| 3109 | General Chemistry 101 | 3 | 3 | 4 |
| 3080 | Biology 1 | 3 | 3 | 4 |
| 7031 | Intro. Clinical Lab 1 | 3 | 3 | 4 |
| | | 12 | 9 | 15 |

SEMESTER 2

| No. | Course Title | Class | Lab | Credits |
|------|------------------------------|-------|-----|---------|
| 1005 | English Comp.: Intro to Lit. | 3 | | 3 |
| 3110 | Gen. Chem. 102 | 3 | 3 | 4 |
| 3081 | Biology 2 | 3 | 3 | 4 |
| 3127 | Instrumental Analysis | 3 | 3 | 4 |
| 7069 | Intro. to Clinical Lab 2 | 3 | 3 | 4 |
| | | 15 | 12 | 19 |

SEMESTER 3

| No. | Course Title | Class | Lab | Credits |
|------|----------------------------------|-------|-----|---------|
| 2015 | Statistics and Quality Control | 3 | | 3 |
| 7032 | Hematology and Coagulation | 3 | 6 | 5 |
| 7033 | Clinical Chemistry | 3 | 6 | 5 |
| 3138 | Biochemistry for Health Sciences | 3 | | 3 |
| | | 12 | 12 | 16 |

SEMESTER 4

| No. | Course Title | Class | Lab | Credits |
|------|------------------------|-------|-----|---------|
| 7034 | Immunohematology | 4 | 8 | 6 |
| 7070 | Intro. to Microbiology | 3 | 6 | 5 |
| 5031 | Medical Law and Ethics | 3 | | 3 |
| 7035 | Clinical Lab Practicum | | | 12 |
| | | 10 | 14 | 26 |

1080* PRACTICAL MEDICAL SPANISH FOR ENGLISH

SPEAKERS

1-3 credits

Students whose major is in any one of the Health Divisions will become acquainted with basic medical terminology in the Spanish language. They will become familiar and conversant with questions, terminology and communication problems common to the medical profession in helping Spanish-speaking patients.

7031 - INTRODUCTION TO THE CLINICAL LAB. 1

4 credits

This course is designed to provide the student with a background in professional and medical ethics through lectures and audio visual aids. Medical terminology, proper use and care of laboratory equipment and reagents are taught. The largest proportion of time is spent in clinical microscopy and serology with laboratory sessions providing learning

experiences. Field trips to affiliated hospitals are arranged. 3 lecture hours, 3 lab hours.

7032 - HEMATOLOGY AND COAGULATION 5 credits
The hemopoietic system, the origin and development of human blood cells, their function; normal and abnormal findings are the basis for this course. Coagulation factors and their role in health and disease are studied. PREREQUISITE: 7031. 3 lecture hours, 8 lab hours.

7033 - CLINICAL CHEMISTRY 6 credits
Designed to acquaint the student with the principles of gravimetric, volumetric and colorimetric analyses as applied to blood and other body fluids, this course stresses manual methods. Quantitative analyses are determined spectrophotometrically. Preparation of solutions and calibration of instruments are included. Students are introduced to automatic equipment through audio-visual aids. PREREQUISITE: 7031.

7034 - IMMUNOHEMATOLOGY AND SEROLOGY 6 credits
Immunohematology provides the student with a background in the principles involved in preparing blood for transfusion purposes; the ABO system and Rh factors are studied. Compatibility testing is also taught. Hemolytic disease of the newborn and the identification of antibodies are included. Lectures in social diseases and the investigation of such by laboratory methods are included in the serology program. Serological tests for antibodies to some bacteria such as streptococcus are also taught. PREREQUISITE: 7032. 4 lecture hours, 8 lab hours.

7035 - CLINICAL LAB PRACTICUM 12 credits
Supervised clinical experience is assigned in an affiliated hospital laboratory under the supervision of a medical technologist (ASCP) and pathologist. The rotation schedule provides experience in the following departments: Blood Bank, Chemistry, Hematology, Microbiology, Serology, and Urinalysis. (Includes summer session).

7069 - INTRODUCTION TO CLINICAL LAB. 2 4 credits
In principle this course is a continuation of the course introduction to the Clinical Laboratory 1. Lecture and demonstration are used to emphasize the study of body fluids and parasites. Basic photometry and spectrophotometry are included. PREREQUISITE: 7031. 3 lecture hours, 3 lab hours.

7070 - INTRODUCTION TO MEDICAL MICROBIOLOGY 4 credits
The study and identification of organisms commonly found in infectious diseases is studied, including bacteria and fungi. Sensitivity testing as an aid to chemotherapy is included. PREREQUISITE: 7031, 7069, 3028. 3 lecture hours, 6 lab hours.

*This course is not reflected in the course curriculum. See Department Chairperson.

MENTAL HEALTH TECHNICIAN

DEPT. 49

Preparing a generalist to work with professionals in human services, the program emphasizes the importance of the multi-disciplinary team. Qualified personnel, educated in the community college, can help meet manpower needs in a wide range of community services; i.e., mental health, public health, social services and education.

Throughout the program, field work and studies are coordinated with general education courses. Lectures, discussions, seminars, site visits and rotating supervised practicum in selected community service organizations are combined to make field work and studies a realistic endeavor. Students are afforded opportunities to gain pragmatic experience in human service agencies providing services for people of all ages.

Minimum Grade Requirement: The Mental Health student is required to earn a minimum course grade of C (73-76) in each of the following courses: 7017-Field Work and Studies 1, 7018-Field Work and Studies 2, 7019-Field Work and Studies 3, 7020-Field Work and Studies 4, 7021-Seminar and Review 1, 7022-Seminar and Review 2, 7221-Seminar and Review/Lab 1, and 7222-Seminar and Review/Lab 2.

A 2.0 or C average is required for other courses incorporated in the Mental Health Program. In order to meet this minimum grade requirement, the student is required to attend all scheduled classes. This includes all practicum assignments. The student will be presented with a course requirement contract specific for each semester. This document is signed mutually by the individual student and the Department Chairperson.

SEMESTER 1

| No. | Course Title | Class | Lab | Credits |
|------|-------------------------------|-------|-----|---------|
| 1004 | English Composition 1 | 3 | | 3 |
| 5008 | Typewriting 1 | 5 | | 3 |
| 7017 | Field Work & Studies 1 | 3 | 3 | 4 |
| 3104 | Human Anatomy/Mental Health 1 | 3 | | 3 |
| 4086 | General Psychology | 3 | | 3 |
| | | 17 | 3 | 16 |

SEMESTER 2

| No. | Course Title | Class | Lab | Credits |
|------|-----------------------------------|-------|-----|---------|
| 1005 | Comp. 2: Intro. to Literature, OR | 3 | | 3 |
| 1007 | Fundamentals of Speech | 3 | | 3 |
| 4008 | Introduction to Sociology 1 | 3 | | 3 |
| 7018 | Field Work & Studies 2 | 3 | 3 | 4 |
| 3105 | Human Anatomy/Mental Health 2 | 3 | | 3 |
| | | 15 | 3 | 16 |

SEMESTER 3

| No. | Course Title | Class | Lab | Credits |
|------|----------------------------------|-------|-----|---------|
| 1008 | Technical Report Writing | 3 | | 3 |
| 4085 | Child & Developmental Psychology | 3 | | 3 |
| 4009 | Introduction to Sociology 2 | 3 | | 3 |
| 7019 | Seminar Field Work & Studies 3 | | 6 | 3 |
| 7021 | Seminar & Review 1 | 3 | | 3 |
| 7221 | Seminar & Review Lab 1 | | 4 | 2 |
| | | 12 | 10 | 17 |

SEMESTER 4

| No. | Course Title | Class | Lab | Credits |
|------|-----------------------------------|-------|-----|---------|
| 4014 | Economics 1 | 3 | | 3 |
| 7020 | Sup. Practicum/Field Work/Stud. 4 | 2 | 12 | 6 |
| 4087 | Prin. of Normal/Abnormal Behavior | 3 | | 3 |
| 7022 | Seminar & Review 2 | 3 | | 3 |
| 7222 | Seminar & Review Lab 2 | | 4 | 2 |
| | | 11 | 16 | 17 |

1171 - PRACT. SPANISH FOR COMMUNITY SERVICES 1

1172 - PRACT. SPANISH FOR COMMUNITY SERVICES 2

3 credits each

This course follows "Practical Medical Spanish", Course No. 1080, 1081 and 1082. In order to maintain bilingual ability related to human services the practical public and mental health education model is followed. Role playing is emphasized throughout the course, bearing in mind the customs and traditions of Spanish-speaking individuals. Community agencies application forms are thoroughly discussed and completed in class. Also, bilingual pamphlets on the different community services are reviewed. Site visits to community agencies and/or meetings related to human services will be undertaken as part of the course.

7017 - FIELD WORK & STUDIES 1

4 credits

This course introduces the student to the multi-disciplinary approach currently utilized in the field of human services. Lectures, discussions, and group participation afford the student opportunities to acquire an appreciation of the duties and responsibilities of a prepared generalist. Through direct observation and supervised participation, the student can see theoretical concepts applied in practical situations.
PREREQUISITE: Acceptance as Mental Health Technology Major.

7018 - FIELD WORK & STUDIES 2

4 credits

Continuing to participate in discussions and small groups on campus, each student is concurrently assigned supervised practicum in a community service agency. Through coordinated participation in academic studies and field work, the student is expected to demonstrate the acquisition of techniques and skills necessary for team membership in human services. Simultaneously the student is afforded opportunities to test personal resources in a supervised setting.
PREREQUISITE: 7017.

7019 - FIELD WORK & STUDIES 3

3 credits

Assigned to a selected community-based service agency, the student receives intensive practical field work experience. Direct supervision is provided by qualified agency personnel. Duties and responsibilities during this affiliation give the student opportunities to function as a member of a team which meets human service needs of community residents.
PREREQUISITE: 7017, 7018. Enrollment in 7021, 7221.

7020 - FIELD WORK & STUDIES 4

6 credits

Rotating supervised field placement enables the student to continue acquiring practical experience in human service agencies. Duties and responsibilities are increased. Direct supervision and guidance are provided by qualified agency personnel. This enables the student to realistically define his/her choice for future work in human services.
PREREQUISITE: 7017, 7018, 7019, 7021, 7221. Enrollment in 7022, 7222.

7021 - SEMINAR AND REVIEW 1

3 credits

The focus of this course is the small group. Weekly seminars are held. Students serve as group leaders and participants. Through direct experience, the student becomes aware of the dynamics present in small group interaction as well as the planning essential for productive group work. Video techniques are an integral part of the course.
PREREQUISITES: 7017, 7018. Enrollment in 7019, 7221.

7022 - SEMINAR AND REVIEW 2

3 credits

Continuation of small group work as described in Course No. 7021. **PREREQUISITE:** 7017, 7018, 7019, 7020, 7221. Enrollment in 7020, 7222.

7221 - SEMINAR AND REVIEW/LAB 1

1 credit

This course emphasizes review and discussion of field work. The student shares his/her practicum experiences with classmates through role playing, simulations and demonstrations. Techniques essential for verbal and written communication are emphasized. The effective utilization of equipment, including audio-visual aids is presented. Students are shown realistic application of germane techniques, such as preparation for employment, interviewing skills, planning educational programs. **PREREQUISITE:** 7017, 7018. Enrollment in 7019, 7021.

7222 - SEMINAR & REVIEW/LAB 2

1 credit

Continuation of 7221. **PREREQUISITE:** 7017, 7018, 7019, 7021, 7221. Enrollment in 7020, 7022.

NUCLEAR MEDICAL TECHNICIAN

DEPT. 79

The Nuclear Medical Technician is a valuable member of the fastest growing discipline involving radiation. Using a variety of radioactive substances having very short lives, he produces a picture of the particular organ under investigation using a gamma camera or scanner. The picture may be on X-ray film or a Polaroid print. By means of these techniques, virtually every organ can be demonstrated without any discomfort to the patient. Using radioactive substances he can, also, assess small amounts of medication present in the blood.

The student is prepared for this vocation in a two-year program at the end of which the successful student will have earned his Associate in Science Degree and will be eligible to take his National Boards Examination.

Half of each day is spent at the College, the other half at either the Medical Center of Western Massachusetts or Wesson Memorial Hospital in performing diagnostic procedures on patients under close supervision.

Minimum Grade Requirement: A student is required to obtain a "C" (73%) or better in each of the following courses:

3037-Nuclear Physics 1, 3038-Nuclear Physics 2, 3083-Radiologic Physics 1, 3091-Anatomy & Physiology 1, 3092-Anatomy & Physiology 2, 7156-Nuclear Medicine Technology 1, 7157-Nuclear Medicine Technology 2, 7159-Nuclear Medicine Technology 3, and 7160-Nuclear Medicine Technology 4.

SUMMER SPECIAL

| | | | |
|------|---------------------|---|---|
| 5037 | Medical Terminology | 2 | 2 |
|------|---------------------|---|---|

SEMESTER 1

| No. | Course Title | Class | Lab | Credits |
|------|------------------------------|-------|-----|---------|
| 1004 | English Composition 1 | 3 | | 3 |
| 2084 | Mathematics of Radiology | 3 | | 3 |
| 3091 | Anatomy & Physiology 1 | 3 | 2 | 4 |
| 3109 | Chemistry 101 | 3 | 2 | 4 |
| 7156 | Nuclear Medical Technology 1 | 3 | 3 | 4 |
| 6350 | Practicum | | 4 | 2 |
| | | 15 | 11 | 20 |

SEMESTER 2

| No. | Course Title | Class | Lab | Credits |
|------|-------------------------------------|-------|-----|---------|
| 1005 | Composition 2: Intro. to Literature | 3 | | 3 |
| 3110 | Chemistry 102 | 3 | 2 | 4 |
| 3092 | Anatomy & Physiology 2 | 3 | 2 | 4 |
| 7157 | Nuclear Medical Technology 2 | 3 | 3 | 4 |
| 6351 | Practicum | | 4 | 2 |
| | | 12 | 11 | 17 |

SUMMER SPECIAL

Practicum

SEMESTER 3

| No. | Course Title | Class | Lab | Credits |
|------|------------------------------|-------|-----|---------|
| 3083 | Radiologic Physics 1 | 3 | 3 | 4 |
| 4086 | General Psychology | 3 | | 3 |
| 3037 | Nuclear Physics 1 | 3 | 3 | 4 |
| 7159 | Nuclear Medical Technology 3 | 3 | 3 | 4 |
| 6352 | Practicum | | 6 | 4 |
| | | 9 | 12 | 15 |

SEMESTER 4

| No. | Course Title | Class | Lab | Credits |
|------|-------------------------------|-------|-----|---------|
| 3037 | Nuclear Physics | 3 | | 3 |
| 5031 | Medical Law & Ethics | 1 | | 1 |
| 3038 | Nuclear Physics 2 | 3 | | 3 |
| 7160 | Nuclear Medicine Technology 4 | 3 | 3 | 4 |
| 6353 | Practicum | | 8 | 4 |
| | | 10 | 11 | 15 |

1080* - PRACTICAL MEDICAL SPANISH FOR ENGLISH

SPEAKERS

1-3 credits

Students whose major is in any one of the Health Division will become acquainted with basic medical terminology in the

Spanish language. They will become familiar and conversant with questions, terminology and communication problems common to the medical profession in helping Spanish-speaking patients.

2084 - MATHEMATICS OF RADIOLOGY

3 credits

This is a review and presentation of the math necessary for the intelligent and versatile use of x-ray equipment. It is also the basis of the math needed for nuclear medicine and radiation therapy and is also taken by these students.

3037 - NUCLEAR PHYSICS 1

4 credits

Fundamentals of Radiation Physics including the atomic structure of both stable and radioactive nuclei. Alpha, beta and gamma radiation are thoroughly discussed and examples applicable to their uses in a nuclear medicine laboratory are given.

3038 - NUCLEAR PHYSICS 2

3 credits

Continuation of Nuclear Medicine Physics 1. Topics discussed are: units of decay, rates of decay, counting statistics including validity, precision and accuracy determinations; interaction of radiation with matter.

3083 - RADIOLOGIC PHYSICS 1

4 credits

Physical Principles of Radiology and Nuclear Medicine. Principles of electrostatics and magnetism are directed toward the understanding of direct current, circuit elements, alternating current, transformers and x-ray generating circuits. Photon detection by survey meters, table-top counters, diagnostic systems and ultrasonic imaging and diagnosis will be covered.

3091 - ANATOMY AND PHYSIOLOGY 1

4 credits

A comprehensive study of the structure and function of the human body, emphasizing the normal, which will serve as a background for the application of scientific principles both in everyday living and in the work of the various health disciplines. Laboratory practice includes the study of tissues by using microscopic examinations and the dissection of animal specimens, along with physiological experimentation. Units covered are concerned with general introductory material, the skeleton, muscles and the nervous system. PREREQUISITES: Biology and Chemistry.

3092 - ANATOMY AND PHYSIOLOGY 2

4 credits

A continuation of Anatomy and Physiology 1 concentrating on body metabolism, reproduction and endocrine control. Laboratory sessions are included. Emphasis is placed on association, correlation, critical thinking and overview of the body as a whole. PREREQUISITE: 3091 - Anatomy and Physiology 1.

5031 - MEDICAL LAW AND ETHICS

1 credit

The application of law in real world situations encountered by medical personnel. Responsibilities and liabilities of health providers are balanced against the rights and expectations of patients. Traditional ethical questions are explored together

with those arising coincident with changing medical practices and public attitudes.

5037 - MEDICAL TERMINOLOGY 2 credits

The student learns the medical terms used in pathology and radiology.

7156 - NUCLEAR MEDICINE 1 4 credits

Basic concepts of instrument function are covered. This includes such topics as: the calibration of survey meters, Geiger-Mueller Tubes, discriminators and spectrometers.

7157 - NUCLEAR MEDICINE 2 4 credits

Continuation of Nuclear Medicine 1 including topics concerning the determination of equipment parameters, geometry considerations, gray scale determination and collimation devices. Basic principles of radiation protection including AEC guidelines, shielding concepts and safe

handling principles are covered.

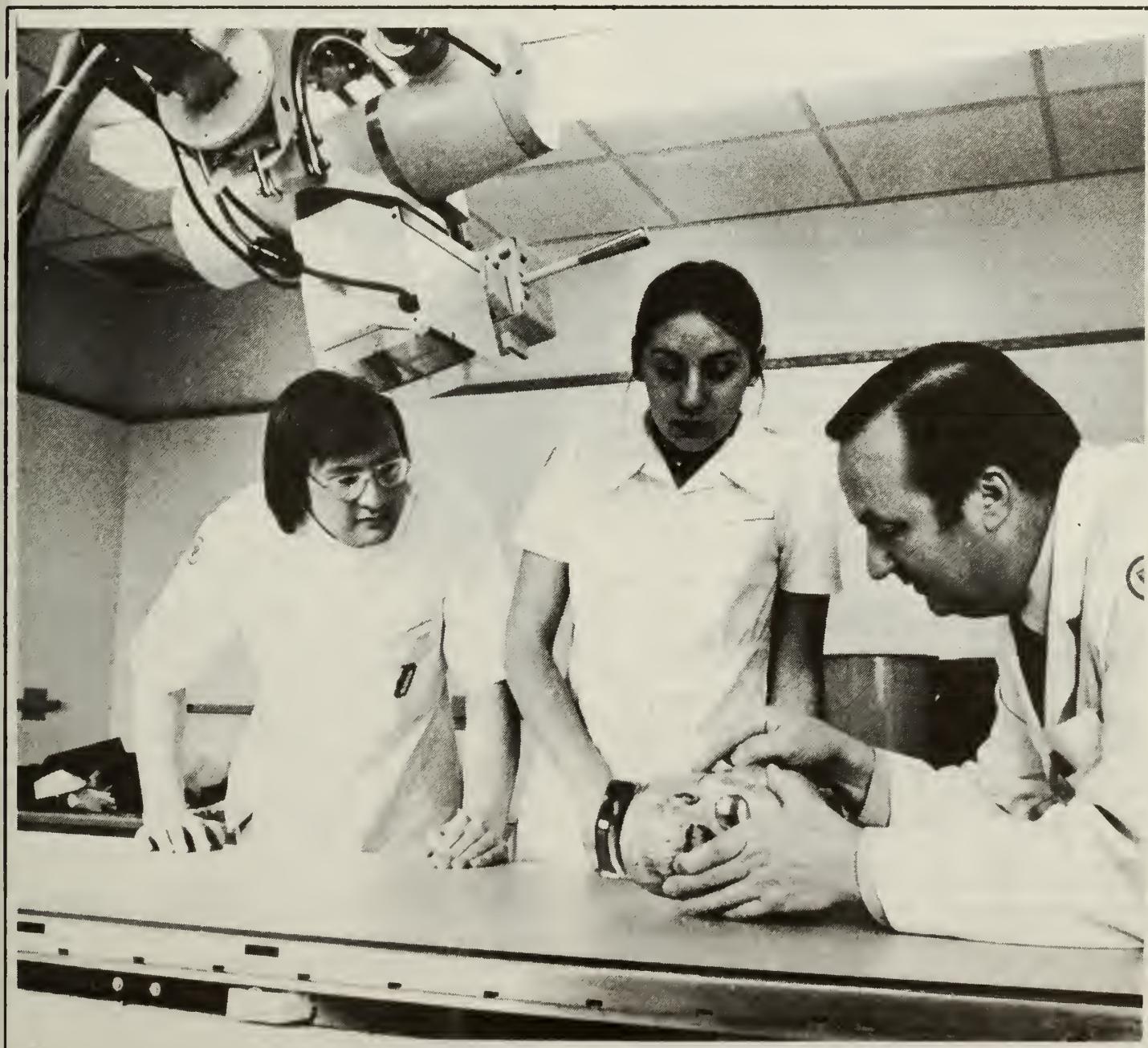
7159 - NUCLEAR MEDICINE 3 4 credits

Continuation of Nuclear Medicine 2. Topics discussed include glass techniques, plastics, balances, centrifuges, preparation of standards, preparation of doses, assay of generator products and radioactive waste disposal. Basic principles of radiochemistry are also covered.

7160 - NUCLEAR MEDICINE 4 4 credits

Continuation of Nuclear Medicine 3. Topics discussed include radio immunoassay and other dilution studies, gastro-intestinal uptake and absorption studies. Also discussed will be the use of computers in Nuclear Medicine, radio-nuclide therapy, auto-radiography and the decontamination process for radio isotope laboratories.

*This course is not reflected in the course curriculum. See Department Chairperson.



NURSING

DEPT. 80

The nursing curriculum is planned to prepare young men and women to be professional nurses who will be competent to render safe and effective nursing care to people within the normal life cycle, both in health and illness. The community-centered approach combines both liberal and technical education for the student within the college and community health agencies.

The student who successfully completes the prescribed curriculum earns the degree of Associate of Science and is eligible to take the licensing examination to qualify as a Registered Nurse. The program is approved by the Massachusetts Board of Registration in Nursing.

Prerequisite for admission to the Nursing Program call for the applicant to be a high school graduate or equivalent. The candidate also must have completed courses in Algebra 2, Chemistry and Biology. The SAT's are required for admission with minimum score of 450 on both the verbal and math portions of the test.

Minimum Grade Requirement: Students must achieve a minimum grade average of 75% or a cumulative point average of 2.15 for nursing courses. In addition, students must attain at least a C in related science courses or a cumulative grade point average of 2.0.

SEMESTER 1

| No. | Course Title | Class | Lab | Credits |
|------|------------------------|-------|-----|---------|
| 4086 | General Psychology | 3 | | 3 |
| 3091 | Anatomy & Physiology 1 | 3 | 3 | 4 |
| 7072 | Nursing 1 | 4 | 10 | 7 |
| | | 10 | 13 | 14 |

SEMESTER 2

| No. | Course Title | Class | Lab | Credits |
|------|------------------------|-------|-----|---------|
| 4087 | Abnormal Psychology | 3 | | 3 |
| 1004 | English Composition 1 | 3 | | 3 |
| 3092 | Anatomy & Physiology 2 | 3 | 3 | 4 |
| 7073 | Nursing 2 | 4 | 10 | 7 |
| | | 13 | 13 | 17 |

SEMESTER 3

| No. | Course Title | Class | Lab | Credits |
|------|-----------------------------|-------|-----|---------|
| 3028 | Microbiology | 3 | 3 | 4 |
| 4008 | Introduction to Sociology 1 | 3 | | 3 |
| 7074 | Nursing 3 | 4 | 15 | 9 |
| | | 10 | 18 | 16 |

SEMESTER 4

| No. | Course Title | Class | Lab | Credits |
|------|-------------------------------|-------|-----|---------|
| xxxx | Social Science Elective | 3 | | 3 |
| xxxx | Humanities Elective (English) | 3 | | 3 |
| 7077 | Nursing 5 | 2 | | 2 |
| 7075 | Nursing 4 | 4 | 15 | 9 |
| 7076 | | 12 | 15 | 17 |

7072 - NURSING 1

7 credits

Nursing 1 is an introduction to contemporary nursing. Scientific principles lay the foundation for the acquisition of requisite basic knowledge, skills and appreciations inherent in the person of the nurse who attempts to meet the needs of man in health and illness. The community-centered approach emphasizes the legal, professional and personal responsibilities of the nurse. Planned educative events within the laboratory setting or related health agencies are correlated with lecture periods to enhance the acquisition of scientific principles and skill development. Instructional media with appropriate polysensory multi-media are utilized. Through a humanistic approach, emphasis is placed on assisting the student to develop an awareness and use his/her intellectual processes toward self-growth, self-discipline and self-evaluation. It includes basic concepts relating to: Health and the Practice of

Nursing; Nursing Practice, (Patient as a Person, As an Organism and His Ecology); Nursing Responsibilities in Relation to Specific Therapeutic Agents. Required of Freshman Students of Nursing. It is offered Fall Semester only.

7073 - NURSING 2

7 credits

With the knowledge of basic concepts and skills in Nursing derived from Nursing 1, the advanced student is provided with opportunities to refine the Nursing Process. Through the study of pathophysiology, the student learns to identify the basic needs, which are paramount to the disease entity, and significant to the age of the person involved, and the Nursing implementations of the ensuing problems. Community resources are utilized in order to explore the student to the various agencies and provide them with the opportunities to plan and deliver care of persons of various age and economic groups experiencing degrees of homeostatic imbalance. Through the practice of assessment needs, identification of problems, setting goals and objectives with the patient, the student develops the skill in planning care, which assists the person to achieve the optimum level of wellness.

7074 - NURSING 3

9 credits

A continuation of Nursing 2, which deals with nursing care of the patient experiencing acute illness. The Nursing Process is further refined in its use in community agencies providing care of the critically ill.

7075/7076 - NURSING 4

9 credits

7075 - Nursing the Developing Family — Nursing the Developing Family is concerned with the maternity cycle and with the people involved in the family unit from birth extending through the life cycle. The developmental approach is used to assist the student assimilate knowledge and understanding of the family as it deals with maintaining health and coping with stress. The nurse-patient relationship is based on the nursing process. The student nurse will begin to develop skills in assessing patient needs and identifying patient problems, and the implementation and evaluation of the nursing care of assigned patients both in the clinical and community setting.

7076 - Community Mental Health Nursing — Through the exposure to Community Mental Health agencies, the Nursing student will be offered opportunities to develop psychiatric nursing skills practiced in previous nursing courses. Assessing family and individual needs, identifying problems and planning care toward meeting patient objectives, will be achieved through the use of community facilities and the involvement with community health team members. Interpersonal skills will be refined through relationships with patients, health team members and in group process. Community resources will be selected in order to expose the student to leaders in community mental health and media which will broaden their field of knowledge in this discipline.

7077 - NURSING 5

2 credits

Nursing process is utilized to assist students to identify their needs and problems in the transitional role from student to graduate. Basic legal concepts from the cognitive framework for the discussion of current issues in nursing. Humanistic and group processes are used to identify the relevant issues.

ASSOCIATE DEGREE IN NURSING FOR REG. NURSES

Springfield Technical Community College's Division of Continuing Education, offers a Program of Studies designed for Registered Nurses. Successful completion of the requirements for this program leads to an Associate in Science in Nursing degree for Registered Nurses.

In order to be eligible to file for acceptance into this program, the applicant must be:

1. A graduate of an approved School of Nursing;
2. Currently licensed as a Registered Nurse in the Commonwealth;
3. Recommended by his/her current employer or Director, School of Nursing.

Curriculum requirements are as follows:

1. Thirty (30) credits to be awarded (irrespective of, but including academic credits earned in a diploma program) to a person currently registered as a nurse in the Commonwealth of Massachusetts.
2. Twenty-one (21) credits are to be earned in the area of liberal arts. Credits may be contracted with the College.

| | |
|---|-----------|
| English | 6 credits |
| Sociology | 6 credits |
| Psychology | 6 credits |
| Electives | 3 credits |
| 3. Twelve (12) credits are to be earned in the area of Continuing Education in Nursing. Choice of courses are subject to contract with the college. | |
| 4. A minimum of fifteen (15) credits must be earned at STCC. Students may challenge or transfer up to eighteen (18) credits toward this degree. | |
| 5. All records are subject to evaluation by the Division of Continuing Education and College Registrar. | |

The General Education Components of this curriculum are offered in all sessions of the Division of Continuing Education.

CE 7090 - PRINCIPLES OF NURSING LEADERSHIP

3 credits

A humanistic approach to the philosophy and principles of team nursing highlighting leadership and management skills. Emphasis is placed on the concept of self-understanding, in order to understand the needs of others in contemporary society both as members of the nursing team and/or recipients of the delivery of health-care services.

CE 7092 - NURSING PROCESS

3 credits

This course offers a systematic approach to the nursing process. Validation, implementation, evaluation are focused upon as approach to attempt to meet individual needs in the delivery of nursing care; instructional media supplements lectures and laboratory presentations.

CE 7093 - PRINCIPLES OF OPERATING ROOM NURSING

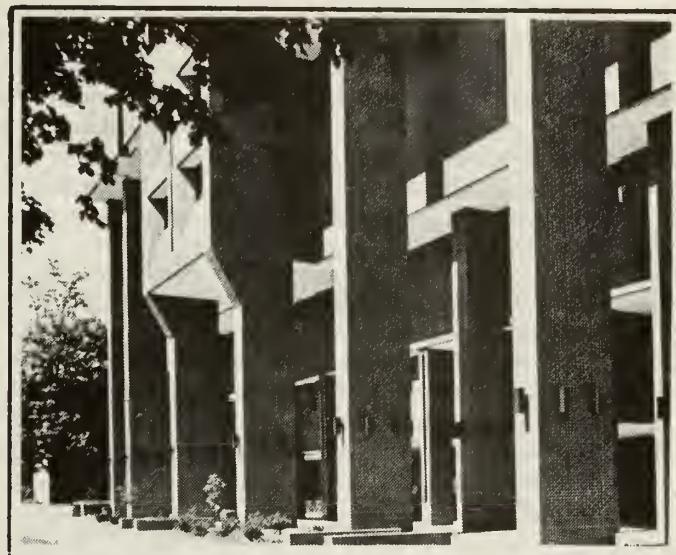
3 credits

This course is designed to orient the student to the operating room environment, adding insight to each experience and its rationale. A primary aim of this course is to develop an understanding and knowledge of the principles of aseptic technique and application in varying measures to nursing experiences.

CE 7351 - INTERPERSONAL RELATIONSHIPS IN NURSING

3 credits

The nurse-patient relationship based on awareness of self is the core of this course. Therapeutic Nursing intervention primarily consists of an understanding of the psychosocial needs of the



human person and the modification of these needs which occur in the wellness-illness continuum extending ultimately to death. Topics of discussion will include: the concept of person, dynamics of behavior, anxiety, depression, the dying process and communication theory.

CE 7352 - HUMAN SEXUALITY IN NURSING 3 credits

The course focuses on human sexuality and its relationship to all fields of nursing from the biological, psychological, socio-cultural and philosophical points of view. It encompasses discussion of interpersonal relationships, healthy sexual attitudes and behavior, sexual identity, response and responsibility, pre-marital sex and marriage in our culture.

CE 7355 - DEATH AND DYING 3 credits

Exploration and discussion of theological, philosophical, anthropological, sociological and medical concepts and theories relative to the dying process. Enables the Registered Nurse to explore her own feelings on death and dying. The aim of the course is to help the Registered Nurse to develop a personal philosophy and set of ethical beliefs about such concepts as life, death, illness, hope, despair and suffering.

CE 7358 - MODERN PSYCHIATRY FOR NURSES

3 credits

This course will consist of lectures, clinical interviews and seminars relating to the categories of mental illness, evaluated from the perspectives of diagnosis, genetics, psychology, biochemistry and psychopharmacology.

CE 7356 - PSYCHOSOCIAL ISSUES IN NURSING CARE

3 credits

This seminar is designed to help professional nurses integrate their experiences in nursing with current psychosocial topics affecting patient care. PREREQUISITE: Registered Nurses only.

CE 7359 - NURSING CARE OF THE AGING PATIENT

3 credits

An in-depth study of cultural, psychosocial, and physical aspects of the aging process will be applied to nursing assessment, planning, intervention and evaluation of the elderly patient. PREREQUISITE: Registered Nurses only.

CE before a course number indicates: Continuing Education (offered currently only in the Evening Division).

OPERATING ROOM TECHNICIAN

DEPT. 47

The objective of the Operating Room Technician program is to prepare men and women to function as a member of a surgical team, or as an assistant to the surgeon, anesthesiologist, or professional nurse in the operating room. The program combines theory and practice of surgical asepsis in the operating room, delivery room, emergency room and central service department. It is designed to develop knowledge and skill in maintaining aseptic techniques within the hospital area.

Degree requirements include successful completion of one-year course work, followed with another year of course work at the College, combined with clinical training.

Students who fail to maintain a minimum 2.0 Q.P.A. in the freshman year are not eligible for clinical training and will be dropped from the program.

Applicants must have an academic background in biology, chemistry and mathematics.

Graduates of this program are eligible for the A.O.R.T. Certifying Examination approved by the A.O.R.T. Advisory Board composed of representatives from the Association of Operating Room Technicians, Inc., Association of Operating Room Nurses, Inc., American Hospital Association and American College of Surgeons.

Minimum Grade Requirement: The Operating Room Technician student is required to earn a minimum grade of "C" (73) in each of the following courses: 7007-Foundations of ORT 1, 7008-O.R.T. 2, 7053-O.R.T. 3, 7054-O.R.T. 4, 7063-Field Work & Studies 1, and 7064-Field Work & Studies 2.

SEMESTER 1

| No. | Course Title | Class | Lab | Credits |
|------|------------------------|-------|-----|---------|
| 1004 | English Comp. 1 | 3 | | 3 |
| 3091 | Anatomy & Physiology 1 | 3 | 2 | 4 |
| 3002 | Chemistry 1 | 3 | 2 | 4 |
| 4086 | General Psychology | 3 | | 3 |
| 7007 | Foundations of ORT 1 | 3 | 2 | 4 |
| | | 15 | 6 | 18 |

SEMESTER 2

| No. | Course Title | Class | Lab | Credits |
|------|------------------------|-------|-----|---------|
| 1005 | English Comp. 2 | 3 | | 3 |
| 3092 | Anatomy & Physiology 2 | 3 | 2 | 4 |
| 3028 | Microbiology | 3 | 2 | 4 |
| 7008 | ORT 2 | 3 | 2 | 4 |
| 7002 | Foundations of Health | 3 | | 3 |
| | | 15 | 6 | 18 |

SEMESTER 3

| No. | Course Title | Class | Lab | Credits |
|------|------------------------|-------|-----|---------|
| 7165 | Pharmacology/ORT | 3 | | 3 |
| 7063 | Field Work & Studies | | 18 | 6 |
| 7053 | ORT 3 | 4 | | 4 |
| 5031 | Medical Law and Ethics | 1 | | 1 |
| | | 5 | 18 | 14 |

SEMESTER 4

| No. | Course Title | Class | Lab | Credits |
|------|------------------------|-------|-----|---------|
| 7042 | Seminar - Surgical/ORT | 3 | | 3 |
| 7064 | Field Work & Studies | | 18 | 6 |
| 7054 | ORT 4 | 4 | | 4 |
| | | 7 | 18 | 13 |

7007 - FOUNDATIONS OF ORT 1

4 credits

A combined lecture and laboratory course which develops competency in the performance of certain generally accepted routine procedures and techniques. Units in this course include: Related Nursing Procedures, Medical Terminology, Human Relations and First Aid.

7008 - O.R.T. 2

4 credits

A continuation of 7007. This course is a combined lecture and

laboratory course in which the student will learn aseptic technique, instrumentation, draping techniques, positioning, etc. in preparing for their field experience.

7053 - O.R.T. 3

4 credits

A general course presenting material in a sequence that will coincide with the practical experience of the technician in the operating room, delivery room and emergency room. PREREQUISITES: 7007, 7008.

7054 - O.R.T. 4

4 credits

This course provides theoretical and technical background to prepare an operating-room circulator technician. Advanced operating room techniques, supervisory skills, interpersonal relationships, circulation duties, procedure analysis and ethics are included. PREREQUISITES: 7007, 7008, 7053.

7165 - PHARMACOLOGY/ORT

3 credits

This course provides a background in the drugs used in the operating room, emergency room and delivery room. Handling, preparation, dosage, contra-indication and toxic effects are stressed. Prerequisites: 7007, 7008.

7042 - SEMINAR- SURGICAL/ORT

3 credits

This course provides the total picture of the operating room patient in surgery. Lectures by surgeons emphasize surgical procedures as they relate to patient care. Review and discussion of field experience. PREREQUISITE: 7007, 7008, 7053.

7063 - FIELD WORK & STUDIES (CLIN. EXP.)

6 credits

Opportunity for the student to observe and to assist the surgeon and other members of the surgical team in the operating room and delivery room, under the direct supervision of Registered Professional Nurses. PREREQUISITES: Enrolled in ORT Program.

7064 - FIELD WORK & STUDIES (CLIN. EXP.)

6 credits

A rotating clinical experience through surgical specialities dealing with: plastic surgery, ophthalmic surgery, neurosurgery, orthopedic surgery, urological surgery, vascular and chest surgery. PREREQUISITES: Enrolled in ORT Program.

7002 - FOUNDATIONS OF HEALTH

3 credits

This is a survey course aimed to develop a personal awareness and understanding of basic health concepts and their application in every day living. Emphasis is placed on attitudinal changes by raising the level of concern through discussions of health facts and current controversial issues. Course content is developed from broad base readings in news media, periodicals, and handout materials, as well as textbook assignments. Wide use is made of audiovisual materials and community resources. A modular unit in Cardio Pulmonary Resuscitation leading to certifications is included in this course.



PHYSICAL THERAPIST ASSISTANT

DEPT. 44

The objective of this program is to prepare men and women for employment within a physical therapy department. The graduate physical therapist assistant works under the direction and supervision of a registered physical therapist performing patient-related activities and other tasks required for the operation of the service.

The two-year curriculum leading to an Associate Degree follows the guidelines adopted by the American Physical Therapy Association. The curriculum is designed to develop technical knowledge and skills and background information for understanding in anatomy, physiology, kinesiology, disease processes, psychological and interpersonal relations. In addition, emphasis is placed on ethical and legal aspects. Approximately one semester of the program is supervised practice in selected clinical settings.

Minimum Grade Requirement: The Physical Therapist Assistant student must obtain a minimum grade of "C" (73%) in each of the following courses: 7003-Medical Lectures, 7006-Dynamics of Human Motion, 7037-Physical Therapist Assisting 1, 7038-Physical Therapist Assisting 2, 7039-Physical Therapist Assisting 3, 7040-Supervised Clinical Experience 441, 7041-Supervised Clinical Experience 442 and 7042 - Physical Therapist Assistant Seminar and 3091-92 – Anatomy & Physiology.

In addition to the above requirement, the student must have earned a minimum of 62 credits with a cumulative quality point average of 2.0 in order to receive the Associate Degree in Physical Therapist Assisting.

SEMESTER 1

| No. | Course Title | Class | Lab | Credits |
|------|--------------------------------|-------|-----|---------|
| 1004 | English Composition 1 | 3 | | 3 |
| 4086 | General Psychology | 3 | | 3 |
| 3091 | Anatomy & Physiology 1 | 3 | 2 | 4 |
| 4008 | Introduction to Sociology 1 | 3 | | 3 |
| 7037 | Physical Therapist Assisting 1 | 2 | 3 | 3 |
| | | 14 | 5 | 16 |

SEMESTER 2

| No. | Course Title | Class | Lab | Credits |
|------|--------------------------------|-------|-----|---------|
| 1005 | Composition 2: Intro. to Lit. | 3 | | 3 |
| 3092 | Anatomy & Physiology 2 | 3 | 2 | 4 |
| | Elective | 3 | | 3 |
| 7006 | Kinesiology | 2 | 2 | 3 |
| 7038 | Physical Therapist Assisting 2 | 2 | 3 | 3 |
| | | 13 | 7 | 16 |

SEMESTER 3

| No. | Course Title | Class | Lab | Credits |
|------|--------------------------------|-------|-----|---------|
| 7068 | Interpersonal Relationships | 1 | | 2 |
| | Elective | 2 | | 2 |
| 7003 | Medical Lectures | 3 | | 3 |
| | Elective | 3 | | 3 |
| 7039 | Physical Therapist Assisting 3 | 2 | 3 | 3 |
| 5031 | Medical Law and Ethics | 1 | | 1 |
| | | 12 | 3 | 14 |

SEMESTER 4

| No. | Course Title | Class | Lab | Credits |
|------|--------------------------------------|-------|-----|---------|
| 7042 | Physical Therapist Assistant Seminar | 2 | | 2 |
| 7040 | Supervised Clinical Experience 441 | | 18 | 6 |
| 7041 | Supervised Clinical Experience 442 | | 18 | 6 |
| | | 2 | 36 | 14 |

1080* - PRACTICAL MEDICAL SPANISH FOR ENGLISH

SPEAKERS 1-3 credits

Students whose major is in any one of the Health Divisions will become acquainted with basic medical terminology in the Spanish language. They will become familiar and conversant with questions, terminology and communication problems common to the medical profession in helping Spanish-speaking patients.

7003 - MEDICAL LECTURES

3 credits

This course presents the tissue changes resulting from trauma,

disease, tumors, and degenerative processes. A series of lectures acquaint the student with the orthopedic, neurological, and general medical conditions she will encounter in treating the patient. PREREQUISITES: Anatomy and Physiology 1 and 2 (3090, 3091).

7006 - KINESIOLOGY

3 credits

This course is designed to develop an understanding of the dynamics of human motion through the study of muscles and joints. PREREQUISITE: Anatomy and Physiology 1 (3090).

7037 - PHYSICAL THERAPIST ASSISTING 1

3 credits

This course provides a survey of Physical Therapy and its relation to the medical environment. Emphasis is placed on the relationship of the assistant to the registered professional Physical Therapist. Body mechanics, selected basic nursing skills, and first aid are included. Field trips for orientation and observation will be planned.

7038 - PHYSICAL THERAPIST ASSISTING 2

3 credits

This course provides lecture and laboratory work in hydrotherapy, electrotherapy, massage and the study of their physiological effects. Principles of bronchial drainage are included. PREREQUISITE: Physical Therapy Assisting Techniques 1.

7039 - PHYSICAL THERAPIST ASSISTING 3

3 credits

The student studies mechanical and physiological concepts of exercise programs with emphasis on the problems related to the patient's motor involvement. Laboratory experience is provided to develop the skill of the student in application of various assistive devices. PREREQUISITE: Dynamics of Motion (7006).

7040, 7041 - SUPERVISED CLINICAL EXPERIENCE 441, 442

6 credits each

Supervised practice in selected clinical settings. PREREQUISITES: Physical Therapist Assisting Techniques 1, 2 and 3 (7037, 7038, and 7039).

7042 - PHYSICAL THERAPIST ASSISTANT SEMINAR

2 credits

The purpose of these seminars is to correlate the academic and technical courses with the practical clinical work. They are alternately scheduled with the affiliation assignments so that students may return to the classroom for sharing and discussion.

7068 - INTERPERSONAL RELATIONS

2 credits

This course is designed to develop the student's awareness of human interactions in the medical environment and the principles which govern good relations. Emphasis is placed on those skills for understanding patients' needs including his psychological and emotional adjustment to physical limitations and altered body image.

*This course is not reflected in the course curriculum. See Department Chairperson.

RADIATION THERAPY

DEPT. 77

This program prepares the student to treat disease with ionizing radiation produced by linear accelerators, cobalt 60, conventional high voltage machines, superficial therapy machines and radium. The student learns how to plan treatments to ascertain the treatment areas using portal films and to use the computer to aid in the planning.

A half of each day is spent at the college, the other half at Wesson Memorial Hospital giving treatments under supervision. At the successful completion of the program the student will have earned his Associate Degree in Science in Radiation Therapy and will be eligible to take his National Boards Examination.

Minimum Grade Requirement: Students in Radiation Therapy are required to obtain a "C" (73%) as a final grade each semester in the following courses: 7151-Radiation Therapy Technology 1, 7152-Radiation Therapy Technology 2, 7154-Radiation Therapy Technology 3, 7155-Radiation Therapy Technology 4, 3035-Radiation Physics 1, 3036-Radiation Physics 2, 3083-Radiologic Physics 1, 3091-Anatomy & Physiology 1, and 3092-Anatomy & Physiology 2.

SUMMER SPECIAL

Orientation and Professional Ethics

SEMESTER 1

| No. | Course Title | Class | Lab | Credits |
|------|--------------------------------|-------|-----|---------|
| 1004 | English Composition 1 | 3 | | 3 |
| 2084 | Mathematics of Radiology | 3 | | 3 |
| 3091 | Anatomy & Physiology 1 | 3 | 2 | 4 |
| 5037 | Medical Terminology | 2 | | 2 |
| 7151 | Radiation Therapy Technology 1 | 3 | 3 | 4 |
| 6350 | Practicum | | 4 | 2 |
| | | 14 | 9 | 18 |

SEMESTER 2

| No. | Course Title | Class | Lab | Credits |
|------|-------------------------------|-------|-----|---------|
| 1005 | Composition 2: Intro. to Lit. | 3 | | 3 |
| 3092 | Anatomy & Physiology 2 | 3 | 2 | 4 |
| 7152 | Radiation Therapy Tech. 2 | 3 | 3 | 4 |
| 6351 | Practicum | | 4 | 2 |
| | | 9 | 9 | 13 |

SUMMER SPECIAL

Practicum

SEMESTER 3

| No. | Course Title | Class | Lab | Credits |
|------|---------------------------|-------|-----|---------|
| 4086 | General Psychology | 3 | | 3 |
| 3083 | Radiologic Physics 1 | 3 | 2 | 4 |
| 7154 | Radiation Therapy Tech. 3 | 3 | 3 | 4 |
| 6352 | Practicum | | 6 | 4 |
| | | 9 | 11 | 15 |

SEMESTER 4

| No. | Course Title | Class | Lab | Credits |
|------|---------------------------|-------|-----|---------|
| 3035 | Radiation Physics 1 | 3 | | 3 |
| 4014 | Economics 1 | 3 | | 3 |
| 5031 | Medical Law and Ethics | 1 | | 1 |
| 7155 | Radiation Therapy Tech. 4 | 3 | 3 | 4 |
| 6353 | Practicum | | 8 | 4 |
| | | 10 | 11 | 15 |

1080* - PRACTICAL MEDICAL SPANISH FOR ENGLISH

SPEAKERS

1-3 credits

Students whose major is in any one of the Health Divisions will become acquainted with basic medical terminology in the Spanish language. They will become familiar and conversant with questions, terminology and communication problems common to the medical profession in helping Spanish-speaking patients.

2084 - MATHEMATICS OF RADIOLOGY

3 credits

This is a review and presentation of the math necessary for the intelligent and versatile use of x-ray equipment. It is also the basis of the math needed for nuclear medicine and radiation therapy and is also taken by these students.

3035 - RADIATION PHYSICS 1

4 credits

The purpose of this course is to present the fundamentals of the structure of matter, electricity and electrical circuitry, the nature and production of x-rays, the basic principles underlying the proper operation of radiological equipment and radiation safety procedures.

3036 - RADIATION PHYSICS 2

3 credits

Detailed principles of Radiologic Physics and primarily concerned with Radiation Therapy. Includes equipment, accessories, measurements, dosimeters, dose calculations and treatment planning. It also includes the production and characteristics of Radionuclides.

3083 - RADIOLOGIC PHYSICS 1

4 credits

Physical Principles of Radiology and Nuclear Medicine. Principles of electrostatics and magnetism are directed toward the understanding of direct current, circuit elements, alternating current, transformers, and x-ray generating circuits. Photon detection by survey meters, table-top counters, diagnostic systems and ultrasonic imaging and diagnosis will be covered.

3091 - ANATOMY AND PHYSIOLOGY 1

4 credits

A comprehensive study of the structure and function of the human body, emphasizing the normal, which will serve as a background for the application of scientific principles both in everyday living and in the work of the various health disciplines. Laboratory practice includes the study of tissues by using microscopic examinations and the dissection of animal specimens, along with physiological experimentation. Units covered are concerned with general introductory material, the skeleton, muscles and the nervous system. PREREQUISITES: Biology and Chemistry.

3092 - ANATOMY AND PHYSIOLOGY 2

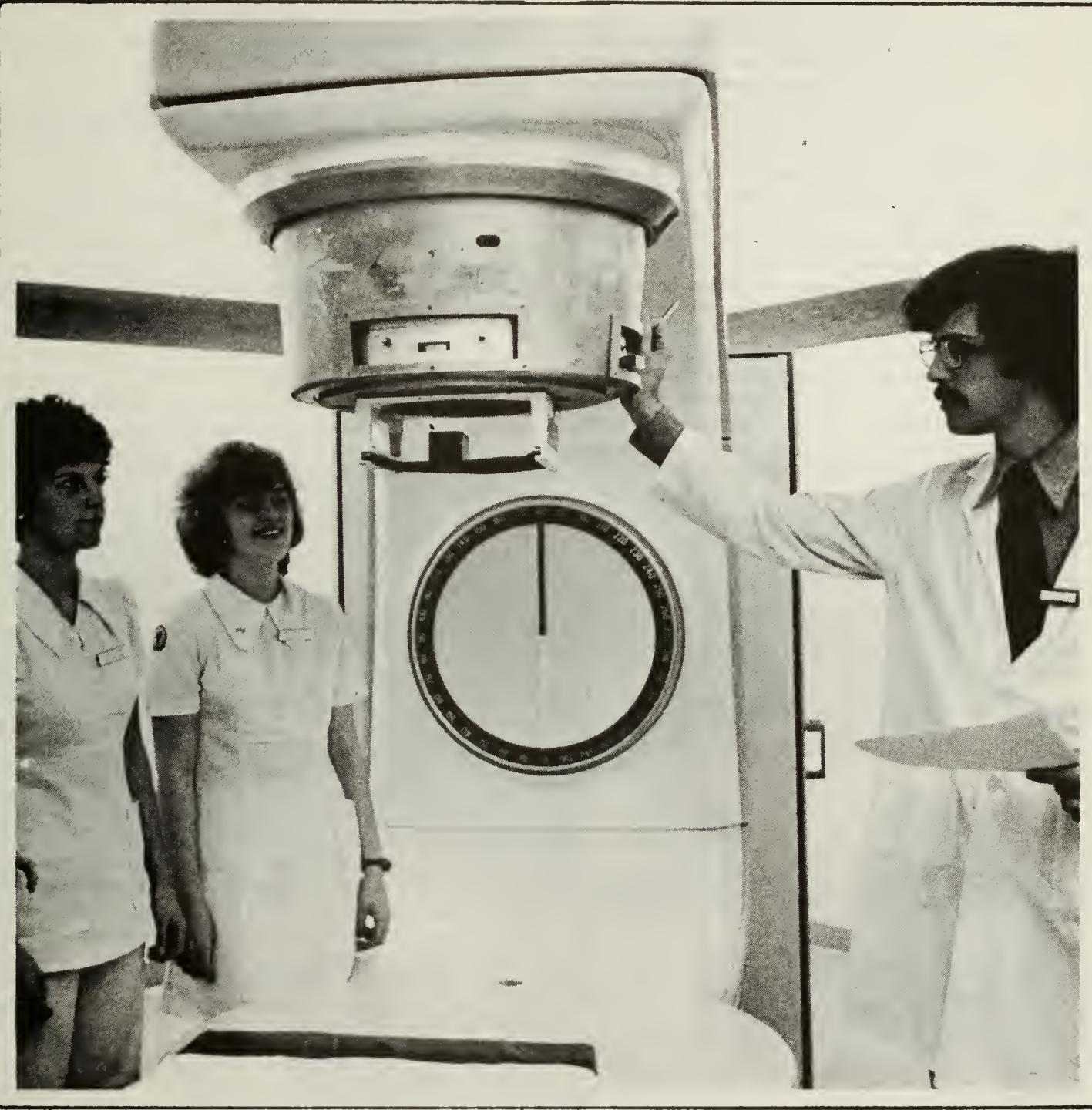
4 credits

A continuation of Anatomy and Physiology 1 concentrating on body metabolism, reproduction and endocrine control. Laboratory sessions are included. Emphasis is placed on associations, correlation, critical thinking and overview of the body as a whole. PREREQUISITE: 3091 - Anatomy and Physiology 1.

5031 - MEDICAL LAW AND ETHICS

1 credit

The application of law in real world situations encountered by medical personnel. Responsibilities and liabilities of health providers are balanced against the rights and expectations of patients. Traditional ethical questions are explored together with those arising coincident with changing medical practices and public attitudes.

**5037 - MEDICAL TERMINOLOGY**

2 credits

The student learns the medical terms used in pathology and radiology.

7151 - RADIATION THERAPY TECHNIQUES 1

4 credits

This course is devoted to learning the operation of the devices and machines used in radiation therapy, some safety precautions, ethics, the hospital team and generalized treatment procedures.

7152 - RADIATION THERAPY TECHNIQUES 2

4 credits

This is a continuation of 7151, but the rationale of treatment is explored more deeply and more complicated treatments are performed.

7154 - RADIATION THERAPY TECHNIQUES 3

4 credits

This is a continuation of Radiation Therapy Techniques 2, but extends to work on the computer and planning of treatment and plotting of treatment fields. The philosophy of treatment fields is also discussed.

7155 - RADIATION THERAPY TECHNIQUES 4

4 credits

This is an extension of 7153 and includes a review of the previous work done in the course in preparation for the national boards examination.

*This course is not reflected in the course curriculum. See Department Chairperson.

RADIOLOGIC TECHNOLOGY

DEPT. 78

The Radiologic Technology program prepares an individual to become an important member of the radiology team, in that he or she produces diagnostic films and radiographs as well as assisting the radiologist in fluoroscopic examinations.

Students spend half of each day at the college and the other half at the affiliating hospitals, Wesson Memorial and the Medical Centre of Western Massachusetts. By keeping practicum and didactics in juxtaposition, the student learns better by being able to put into practice what he or she has recently learned. A live 500 mA X-ray unit, numerous phantoms, a wide assortment of grids, screens and other equipment on campus enable the student to attain the necessary skills. Exposure to anatomy and physiology, radiologic physics, radiologic math, and liberal arts courses including English Composition, sociology and psychology round out the curriculum. Students successfully completing this program will receive their Associate in Science degree from the College and will be eligible to take their National Board Examination from the American Registry of Radiologic Technologists, the national certifying body. The program operates under the auspices of the Joint Review Committee on Medical Education in Radiologic Technology of the American Medical Association.

Minimum Grade Requirement: Students in Radiologic Technology are required to obtain a "C" (73%) as a final grade in the following courses: 3083-Radiologic Physics 1, 3084-Radiologic Physics 2, 3090-Radiologic Physics 3, 3091-Anatomy & Physiology 1, 3092-Anatomy & Physiology 2, 6166-Radiologic Technology 1, 6167-Radiologic Technology 2, 6168-Radiologic Technology 3, and 6169-Radiologic Technology 4.

SUMMER SPECIAL

Orientation and Professional Ethics

SEMESTER 1

| No. | Course Title | Class | Lab | Credits |
|------|--------------------------|-------|-----|---------|
| 1004 | English Composition 1 | 3 | | 3 |
| 2084 | Mathematics of Radiology | 3 | | 3 |
| 3091 | Anatomy & Physiology 1 | 3 | 3 | 4 |
| 5037 | Medical Terminology | 2 | | 2 |
| 6166 | Radiologic Technology 1 | 3 | 3 | 4 |
| 6350 | Practicum | | 4 | 2 |
| | | 14 | 10 | 18 |

SEMESTER 2

| No. | Course Title | Class | Lab | Credits |
|------|-------------------------------------|-------|-----|---------|
| 1005 | Composition 2: Intro. to Literature | 3 | | 3 |
| 3092 | Anatomy & Physiology 2 | 3 | 3 | 4 |
| 6167 | Radiologic Technology 2 | 3 | 3 | 4 |
| 6351 | Practicum | | 4 | 2 |
| | | 9 | 13 | 13 |

SUMMER SPECIAL

Practicum

SEMESTER 3

| No. | Course Title | Class | Lab | Credits |
|------|-------------------------|-------|-----|---------|
| 4086 | General Psychology | 3 | | 3 |
| 3083 | Radiologic Physics 1 | 3 | 3 | 4 |
| 6168 | Radiologic Technology 3 | 3 | 3 | 4 |
| 6352 | Practicum | | 6 | 4 |
| | | 9 | 12 | 15 |

SEMESTER 4

| No. | Course Title | Class | Lab | Credits |
|------|-------------------------|-------|-----|---------|
| 4014 | Economics | 3 | | 3 |
| 3084 | Radiologic Physics 2 | 3 | | 3 |
| 6169 | Radiologic Technology 4 | 3 | 3 | 4 |
| 5031 | Medical Law and Ethics | 1 | | 1 |
| 6353 | Practicum | | 8 | 4 |
| | | 10 | 11 | 15 |

1080* - PRACTICAL MEDICAL SPANISH FOR ENGLISH

1-3 credits

Students whose major is in any of the Health Divisions will become acquainted with basic medical terminology in the Spanish language. They will become familiar and conversant with questions, terminology and communication problems common to the medical profession in helping Spanish-speaking patients.

2084 - MATHEMATICS OF RADIOLOGY

3 credits

This is a review and presentation of the math necessary for the intelligent and versatile use of x-ray equipment. It also provides the mathematical basis needed for nuclear medicine and radiation therapy and is taken by these students.

3083 - RADIOLOGIC PHYSICS 1

4 credits

Physical Principles of Radiology and Nuclear Medicine. Principles of electrostatics and magnetism directed toward the understanding of direct current, circuit elements, alternating current, transformers and x-ray generating circuits; photon detection by survey meters and table-top counters, diagnostic systems, ultrasonic imaging and diagnosis will be covered.

3084 - RADIOLOGIC PHYSICS 2

4 credits

A continuation of Radiologic Physics 1. Study of basic atomic and nuclear structure directed toward an understanding of radiation and radiationless transitions. Interaction of photons and elementary particles in matter will be discussed. Specific radiobiological effects from photons will be covered, including effects on DNA, lymphatic systems, skeletal system and reproductive system.

3091 - ANATOMY AND PHYSIOLOGY 1

4 credits

A comprehensive study of the structure and function of the human body, emphasizing the normal, which will serve as a background for the application of scientific principles both in everyday living and in the work of the various health disciplines. Laboratory practice includes the study of tissues by using microscopic examinations and the dissection of animal specimens, along with physiological experimentation. Units covered are concerned with general introductory material, the skeleton, muscles and the nervous system. PREREQUISITES: Biology and Chemistry.

3092 - ANATOMY AND PHYSIOLOGY 2

4 credits

A continuation of Anatomy and Physiology 1 concentrating on body metabolism, reproduction, and endocrine control. Laboratory sessions are included. Emphasis is placed on association, correlation, critical thinking and overview of the body as a whole. PREREQUISITE: 3091 - Anatomy and Physiology 1.

5031 - MEDICAL LAW AND ETHICS

1 credit

The application of law in real world situations encountered by medical personnel. Responsibilities and liabilities of health providers are balanced against the rights and expectations of patients. Traditional ethical questions are explored together with those arising coincident with changing medical practices and public attitudes.

5037 - MEDICAL TERMINOLOGY

2 credits

The student learns the medical terms used in pathology and radiology.

6166 - RADIOLOGIC TECHNOLOGY 1

4 credits

This course is limited to students in the radiologic technology program. It deals with the correct positioning and technique for the extremities. The manufacture and composition of x-ray film is discussed together with the processing of it.

6167 - RADIOLOGIC TECHNOLOGY 2

4 credits

This is a continuation of 6166, the difference being that the x-raying of the trunk is covered, including the organs within the abdomen. The student progresses further into grids, magnification techniques, penetrometers and heating and cooling curves.

6168 - RADIOLOGIC TECHNOLOGY 3

4 credits

This is a continuation of 6167 and the students study special views of the examinations already covered together with examinations requiring contrast media.

6169 - RADIOLOGIC TECHNOLOGY 4

4 credits

This is a continuation of 6168 and is devoted to special procedures and a complete review of all the previous work. The special procedures are broken down into three areas; namely, radiographic equipment for special procedures, radiographic positioning, techniques for specific procedures and contrast media used.

*This course is not reflected in the course curriculum. See Department Chairperson.



RESPIRATORY THERAPY

DEPT. 48

Respiratory Therapy is one of the newest fields in hospital work and has received considerable attention in recent years due to public interest in the problems of air pollution and smoking. The respiratory therapist administers treatments and medications to deal with diseases of the respiratory tracts such as emphysema, bronchitis and industrial diseases. Therapists also carry out various diagnostic tests to help the physician in determining the proper course of treatment for his patient, including mechanical ventilators and application of chest physiotherapy.

The graduate registered therapist is assured of rapid advancement in a field where there are apt to be more jobs than therapists to fill them. While the greater number of graduates work in hospitals or hold teaching positions, the future undoubtedly will see openings in industry, rehabilitation centers and home care programs.

The program is sponsored by area hospitals in cooperation with the College and is approved by the Board of Schools of Inhalation Therapy.

Minimum Grade Requirement:

Section A:

The student enrolled in the Respiratory Therap. Program must obtain a minimum grade of "C" (73%) in the following courses:

- 7078 - Fundamentals of Respiratory Therapy 1
- 7011 - Respiratory Therapy 1
- 7081 - Respiratory Therapy 2
- 7012 - Respiratory Therapy Application/Clinical Sciences
- 7009 - Affiliation Workshop
- 7010 - Affiliation Clinical Practice
- 3014 - Respiratory Physics and Equipment

Section B:

3028 - Microbiology

- 3091 - Anatomy & Physiology 1
- 3092 - Anatomy & Physiology 2
- 3109 - Chemistry 101
- 3110 - Chemistry 102

Any student not completing the requirements for Section A will not be allowed to continue in the program until he has satisfactorily completed the requirement. Any student not completing the requirements for Section B will be on a semester's probation in order to complete this requirement. Any student not obtaining the satisfactory grade requirement will not be allowed to affiliate. Each incident will be reviewed by the department chairperson and the advisory committee.

SEMESTER 1

| No. | Course Title | Class | Lab | Credits |
|------|------------------------------|-------|-----|---------|
| 1004 | English Comp. 1 | 3 | | 3 |
| | Mathematics 2321, 22, 23 | 3 | | 3 |
| 3091 | Anatomy & Physiology 1 | 3 | 2 | 4 |
| 3109 | General Chemistry 101 | 3 | 3 | 4 |
| 7078 | Fund. of Respiratory Therapy | 1 | 4 | 3 |
| | | 13 | 9 | 17 |

SEMESTER 2

| No. | Course Title | Class | Lab | Credits |
|------|--------------------------------|-------|-----|---------|
| 1005 | Composition 2: Intro. to Lit. | 3 | | 3 |
| 3014 | Respiratory Physics and Equip. | 2 | 2 | 3 |
| 3110 | General Chemistry 102 | 3 | 3 | 4 |
| 3092 | Anatomy & Physiology 2 | 3 | 2 | 4 |
| 4086 | General Psychology | 3 | | 3 |
| | | 14 | 7 | 17 |

SEMESTER 3

| No. | Course Title | Class | Lab | Credits |
|------|---------------------------------|-------|-----|---------|
| 3028 | Microbiology | 3 | 2 | 4 |
| 7011 | Respiratory Therapy 1 | 2 | | 2 |
| 7012 | Resp. Ther. Appl/Clin Science 1 | 2 | 4 | 3 |
| 7013 | Clinical Practice | 1 | 4 | 2 |
| 7081 | Respiratory Therapy 2 | 2 | | 2 |

| | | | | |
|-------------------|----------------------------------|-------|-----|---------|
| 7088 | Pulmonary Function Testing | 1 | 2 | 2 |
| 7089 | Mechanical Ventilation/Resuscit. | 2 | 2 | 3 |
| | | 13 | 14 | 18 |
| SEMESTER 4 | | | | |
| No. | Course Title | Class | Lab | Credits |
| 7009 | Affiliation Workshops | 3 | 12 | 6 |
| 7010 | Affiliation Clinical Practice | 3 | 12 | 6 |
| 7014 | Resp. Ther. Appl/Clin Science 2 | 1 | 8 | 3 |
| | | 7 | 32 | 15 |

3014 - RESPIRATORY PHYSICS & EQUIPMENT 3 credits

This course is designed to be an introduction to Respiratory Therapy equipment and the physical principles involved in their use. Emphasis is placed on the chemistry and physics of respiration and the clinical adaption of physical principles, gas laws, osmosis, solubility, resistance, gas analysis, surface tension, humidity and aerosol will be discussed. This course consists of lectures, demonstrations in the lab, discussions, and field trips. PREREQUISITE: 7078.

7009-7010 - AFFILIATION WORKSHOP & CLINICAL PRACTICE 6 credits each

The clinical, bedside and laboratory application of Respiratory is presented utilizing the facilities of affiliated hospitals under supervision of hospital therapists, physicians and adjunct faculty. Clinical affiliation is designed to expose students to all aspects of Respiratory Therapy and provide them with an environment in which to perform procedures at the patients' bedside, in the laboratory and in-out-facilities. PREREQUISITES: 3014, 7078, 7011, 7012, 7013, 7088, 7089, 7081.

7011 - RESPIRATORY THERAPY 1 2 credits

An extensive study in the use of various modes of aerosol, humidity and gas therapy, including O₂, CO₂, He, N₂ therapy and hyperbaric chamber. The theories, principles and rationale of the various modes of therapy and their clinical application will be examined in depth. A unit of Respiratory Pharmacology is also included. PREREQUISITES: 3014, 7078.

7012,7014 - RESPIRATORY THERAPY APPLICATION AND CLINICAL SCIENCES 1 & 2 3 credits each

This is a two-part course offered over two semesters that encompasses intensive Respiratory Anatomy and Physiology designed to prepare the student for clinical judgment in Respiratory Therapy. Topics related to Respiratory function such as pulmonary function testing, respiratory pharmacology, controlled ventilation (physiological aspects) blood gas analysis and acid base balance and breath sounds are included. PREREQUISITES: 3014, 7078.

7013 - CLINICAL PRACTICE 2 credits

This is an introductory course in clinical affiliation. This course is designed to familiarize the student with the hospital as an institution. The student will be introduced to various procedures and departments within the hospital. The student will be exposed to basic functions of the Respiratory Therapy Dept. This course will allow for the smooth transition of the student into a more extensive clinical affiliation in the fourth semester. PREREQUISITES: 7078, 3014.

7078 - FUNDAMENTALS OF RESPIRATORY THERAPY 3 credits

This is an introductory course covering basic respiratory anatomy and physiology, fundamental theories, equipment



and practices of Respiratory Therapy. This course is designed to provide the student with a foundation of knowledge and fundamental theory which will enable the student to grasp more complex theories and practices of Respiratory Therapy in subsequent courses.

7081 - RESPIRATORY THERAPY 2

2 credits

An extensive study of the principles and theories of IPPB, chest physio therapy and home rehabilitation. Equipment, facilities and current trends in these areas will be examined. Integration of the various modes of therapy and their clinical application is discussed in this course. PREREQUISITES: 7078, 3014.

7088 - PULMONARY FUNCTION TESTING

2 credits

This course will examine in detail all diagnostic tests in use, their interpretation and the patterns of various respiratory diseases. This course is primarily taught in the pulmonary lab. Arterial blood gases and their interpretation are covered in depth. PREREQUISITES: 7078, 3014.

7089 - MECHANICAL VENTILATION & RESUSCITATION

3 credits

An indepth study of the principles of mechanical ventilation and resuscitation. All ventilators in common use will be examined in detail and their clinical use will be discussed. Resuscitation equipment and their application will be included as will pediatric ventilation. PREREQUISITES: 3014, 7078.



math & natural sciences



MATH & NATURAL SCIENCES

ENGINEERING SCIENCES

6049 - SPECIAL PROJECTS IN ENGINEERING 1

1,2,3 or 4 cr.

Special projects in engineering under the direction of an instructor. Prerequisite: Permission of the Department Chairman.

6050 - SPECIAL PROJECTS IN ENGINEERING 2

1,2,3 or 4 cr.

Continuation of 6049. Prerequisite: Permission of the Department Chairman.

6107 - SPECIAL PROJECTS IN ENGINEERING TECHNOLOGY 1

1,2,3 or 4 cr.

Special projects in Engineering Technology under the direction of an instructor. Prerequisite: Permission of the Department Chairman.

6108 - SPECIAL PROJECTS IN ENGINEERING TECHNOLOGY 2

1,2,3 or 4 cr.

Continuation of Special Projects in Engineering Technology 1 (6107). Prerequisite: Permission of the Department Chairman.

6154 - INTRODUCTION TO ENGINEERING 21

2 credits

An introduction to the fields of science and engineering for freshman engineering students. Educational requirements, career possibilities, job functions and material rewards are considered. Guest lectures are given by various scientists and engineers concerning their specific disciplines. Numerous field trips to scientific and engineering facilities are made. Engineering design exercises requiring creative efforts are assigned and the basic concepts of linear algebra including Gaussian Elimination, Cramer's Rule, and Matrix Techniques are developed. Two hours of lecture and one three hour laboratory. Prerequisite: Math 2331-33.

6175 - INTRODUCTION TO ENGINEERING 22: COMPUTER PROGRAMMING

3 credits

A continuation of Introduction to Engineering 21 with the major emphasis on the development of the computer language Fortran as a powerful tool in solving a number of diverse problems in science and engineering. A brief introduction to numerical analysis is also presented. Three hours of lecture. Prerequisite: Math 2350-53.

6176 - SENIOR ENGINEERING SEMINAR

no credit

This course is designed to increase the awareness of senior engineering transfer students to the opportunities for transfer to the local engineering colleges and universities as well as the opportunities for employment with the local engineering industries. This is accomplished by seminars, meetings and tours, both at and away from STCC, with college, university and industrial representatives. A satisfactory grade in this course is contingent upon the submittal of several transfer applications through the college transfer counselor for those students interested in continuing their engineering education. The students interested in an industrial position must prepare a resume and submit the necessary job applications through the college placement director to complete satisfactorily this course. Senior standing in the Engineering Transfer Department is required.



6217 - MECHANICS 1

3 credits

A vector approach to the study of engineering statics. This includes the resolution and composition of forces as applied to the analysis of systems in static equilibrium. Friction, centroids and moments of inertia are investigated. Prerequisite: Mathematics 2350-53 and Physics 3015.

6218 - MECHANICS 2

3 credits

A vector approach to kinematics and particle kinetics utilizing Newton's Laws of Motion, Conservation of Energy and the concept of Impulse and Momentum. Problems of rotation and translation are analyzed in rectilinear and curvilinear co-ordinates. Prerequisite: Mechanics 1 (6217).

6219 - SYSTEMS ANALYSIS 1

4 credits

Physical characteristics and mathematical models of system elements with an emphasis on electrical circuits, techniques for writing and solving system dynamic equations. Three hours of lecture and one three hour laboratory. PREREQUISITE: Math 2354-57.

6220 - SYSTEMS ANALYSIS 2

4 credits

Concepts relating to transfer functions: digital and analog solutions of system equations, time and frequency domain analysis techniques and stability. Three hours of lecture and one three hour laboratory. PREREQUISITE: Systems Analysis 1 (6219).

6221 - INTRODUCTION TO MATERIAL SCIENCE

3 credits

The atomic and molecular phenomena responsible for the behavior of materials. The relationship between the atomic structure of materials and their behavior is emphasized. Prerequisite: Chemistry 22 (3006).

6224 - ENGINEERING MEASUREMENT AND ANALYSIS

3 credits

Introduction to engineering measurements and analysis, relating scientific principles to engineering applications, stressing experimental methods, data acquisition and processing. Two hours of lecture and one three hour laboratory. PREREQUISITES: Physics 21 (3015) and Physics 22 (3016); Systems Analysis 1 (6219) is recommended but not required.

6226 - INTRODUCTION TO CHEMICAL ENGINEERING

3 credits

An introduction to the material and energy balances commonly applied to processes in the chemical, petroleum and environmental fields. Also included is a study of the pressure-volume-temperature relationships of gases and a brief

introduction to selected thermodynamic properties of solids, liquids and gases. Computer solutions are utilized in selected problems. Prerequisites: Math 2354-57, Chemistry 22, 3006 and Introduction to Engineering 22, 6175.

6227 - ENGINEERING THERMODYNAMICS 1 3 credits
A classical presentation of the study of the laws of conservation of matter and energy, the three basic laws of thermodynamics and their application to batch and flow processes. Thermal properties of ideal and real gases, solids and liquids as well as energy cycles, chemical reactions and phase equilibrium are presented. Prerequisites: Math 2358-61 and Physics 21 (3015).

6228 - ENGINEERING THERMODYNAMICS 2 3 credits
Continuation of Engineering Thermodynamics 1. Deals with the engineering applications. These include fluid mechanics, gas dynamics, gas and vapor power cycles, refrigeration, heat transfer and chemical reactions and equilibrium. Prerequisite: Engineering Thermodynamics 1 (6227).



6231 - FLUID MECHANICS 3 credits
This course consists of a study of fluid statics and kinematics. A complete study of frictionless incompressible flow using Bernoulli's equation, the continuity equation and the momentum equation is presented and applied to various engineering problems. The concept of viscosity and laminar viscous flow is introduced using the Navier Stokes equation in rectangular and cylindrical co-ordinates. Pipe friction and the Reynolds number in laminar and turbulent flow are discussed. The boundary layer equations on laminar and turbulent flows are developed. Corequisite: Engineering Mathematics (2020).

6232 - FORTRAN FOR SCIENTISTS & ENGINEERS 3 credits
This course is designed to offer an introduction to the computer language Fortran. The content of the course will include a brief introduction to the general theory of digital computers as well as Fortran programming. Fortran will be studied as an example of a computer language. Special attention will be placed upon using Fortran as a powerful tool in solving a number of diverse problems drawn from science and engineering. Prerequisite: Math 2311-13.

6235 - HEAT TRANSFER 3 credits
A study of the fundamental laws of heat transfer by

conduction, convection and radiation. Application of conduction and convection to insulation and heat exchanger design. Selected one, two and three dimensional problems in conductive heat transfer are solved using analytical, graphical and numerical techniques. Heat transfer in laminar and turbulent boundary layers in compressible fluids are investigated. Radiative heat exchange is examined. Prerequisite: Fluid Mechanics (6231).

6236 - MATERIAL SCIENCE LAB 1 credit
This course is an introduction to mechanical testing and the metallography of metals and alloys.

6238 - MECHANICS OF MATERIALS 3 credits
A study of the stress-strain relationships in solids subjected to external force loads. This includes tension, compression, torsion, flexure and deflection of columns and beams. Prerequisite: Mechanics 1 (6217).

6241, 6242, 6243, 6244, 6245, 6246, 6247, 6248, 6249 - PROGRAMMED ENGINEERING GRAPHICS

6241 - MODULE 1 1 credit
Instruments and their use, applied geometry, orthographic drawing and sketching.

6242 - MODULE 2 1 credit
Lettering, auxiliaries: normal and edge views, sections and conventions.

6243 - MODULE 3 1 credit
Intersections and developments, drawings and the shop working drawings.

6244 - MODULE 4 1 credit
Dimensions, notelimits, catalogues.

6245 - MODULE 5 1 credit
Introduction, electricity and batteries, schematics, assembly-disassembly.

6246 - MODULE 6 1 credit
Power Distribution Graphics: Electrical drafting, contractor drawings.

6247 - MODULE 7 1 credit
Electronics Graphics: Electrical (Electronic Drafting), system design, special equipment.

6248 - MODULE 8 1 credit
Architectural Graphics: Oblique drawings, drawing of structures, graphical vector analysis.

6249 - MODULE 9 1 credit
Perspective drawings, shapes and shadows, presentation drawings.

6251-6264 - MACHINE SHOP TECHNIQUES 1 cr. per module
6251 - MODULE 1 - Basic Shop Techniques
6252-MODULE 2 - Advanced Lathe Operation
6253-MODULE 3 - Advanced Milling Machine Operations
6254-MODULE 4 - Tape Machine Operations
6255-MODULE 5 - Grinding Machine Operations
6256-MODULE 6 - Jig Boring
6257-MODULE 7 - Elementary Welding
6258-MODULE 8 - Heat Treating
6259-MODULE 9 - Jig Welding
6260-Module 10 - Forging Techniques
Prerequisites: Module 1,7-8 none. Remaining modules by permission of instructor.

BIOLOGY

3026 - ECOLOGY 4 credits
An introductory course surveying broad ecological principles with considerable emphasis to be placed on the study of the plant-animal interrelationships, and energetics of local freshwater and terrestrial habitats. Additional topics to be discussed will include the analysis of organizational patterns and dynamics of populations, communities and ecosystems. Trips to local biotic communities will stress investigative learning and field study. Prerequisite: General Biology or permission.

3027 - PRACTICAL ASEPSIS 3 credits
This course is designed for students enrolled in the Operating Room Technician's Program. It deals only with those aspects of microbiology of concern to operating room technicians, such as asepsis and practical aspects of medical microbiology. This course is not transferable. It is only open to ORT students. No prerequisites.

3028 - MICROBIOLOGY 4 credits
A basic study of micro-organisms, their activities, destruction and control. The concepts of infection, immunity and hypersensitivity precede the survey of the microbiology of major infectious diseases. Prerequisites: High School Chemistry and Biology.

3051 - INVESTIGATIONS IN BIOLOGY 1 4 credits
This course is designed for highly motivated prospective science majors. Attendance in the regular 3080 lecture will be required. A three-hour lab discussion session will be required as well. Prerequisite: Permission of Department Chairman.

3052 - INVESTIGATIONS IN BIOLOGY 2 4 credits
A continuation of 3051. Attendance in regular 3081 lectures is required. Prerequisite: 3051 and permission of Department Chairman.

3077 - HUMAN BIOLOGY 1 4 credits
This course is an integration of anatomy, physiology and clinical laboratory procedures that will prepare medical assistants to aid the physician in his diagnosis and treatment of a patient's illness. A comprehensive study is made of the

structure and function of the human body. The course emphasizes the study of cells and tissues as related to the skeletal, muscular, respiratory and circulatory systems. Clinical laboratory procedures stressed in Human Biology 1 and Human Biology 2 are: Hematology, Simple Microbiology, Immunology, Urinalysis, Basal Metabolism and other routine chemical tests. Open to Medical Assistants and Medical Secretaries only.

3078 - HUMAN BIOLOGY 2 4 credits
This is a continuation of Human Biology 1. This program includes the nervous, endocrine, digestive and genito-urinary systems and their relationships to total body organization. Prerequisite: Human Biology 1 (3077).

3079 - INTRODUCTORY ZOOLOGY 4 credits
This course is designed for students who need one semester of a laboratory science to fulfill their program requirements. The course introduces the principles of zoology including cell structure and function: the physiology, heredity, development, behavior and evolution of animals, and is supplemented by laboratory examination of the anatomy of the major groups in the animal kingdom. No prerequisites.

3080 - GENERAL BIOLOGY 1 4 credits
Geared to the prospective science major, the first semester of this course focuses on a study of chemical and cellular similarities in living organisms emphasizing the basic unity of life. General morphology and physiology of plants and vertebrate and invertebrate animals are discussed with emphasis on the vascular plant and human organ systems. Prerequisites: Qualified science majors, allied health candidates or permission of the instructor.

3081 - GENERAL BIOLOGY 2 4 credits
Modern concepts in animal behavior, genetics, population biology and ecology and evolution are discussed. A survey of plant and animal kingdoms emphasizes diversity, similarities and possible evolutionary patterns. Prerequisite: General Biology 1 (3080).

3085 - NATURAL HISTORY 4 credits
This course provides the student with the background and tools needed to organize and lead science activities on the elementary school level. Topics include Astronomy, Geology, Meteorology, Botany, Zoology and Ecology. This course is restricted to students enrolled in the Early Childhood Education Program. No prerequisites.

3088 - ENVIRONMENTAL MICROBIOLOGY 3 credits
A general investigation of microbial structure, growth and physiology and the reactions of micro-organisms to their physical and chemical environment. Prerequisite: Chemistry 1 (3002) or Chemistry 2 (3086).

3091 - ANATOMY & PHYSIOLOGY 1 4 credits
A comprehensive study of the structure and function of the human body, emphasizing the normal, which will serve as a

background for the application of scientific principles both in everyday life and in the work of the various health disciplines. Laboratory practice includes the study of tissues by using microscopic examinations and the dissection of animal specimens, along with physiological experimentation. Units covered are concerned with general introductory material, the skeleton, muscles and the nervous system. Prerequisites: Biology and Chemistry.

3092 - ANATOMY & PHYSIOLOGY 2 4 credits
A continuation of Anatomy and Physiology 1 concentrating on body metabolism, reproduction and endocrine control. Laboratory sessions are included. Emphasis is placed on association, correlation, critical thinking and overview of the body as a whole. Prerequisite: Anatomy and Physiology 1 (3091).

3093 - HUMAN ANATOMY 1 4 credits
(For Operating Room Technicians) This program correlates gross and microscopic anatomy with the physiology of the human body, system by system. Stress is given to areas of special concern to the operating room technician. Three lectures, one two-hour lab.

3099 - BASIC SCIENCE 3 4 credits
Introduction to experimental biology, through interpretation of many simple experiments. Emphasis on development of the student's confidence, initiative and self-reliance. Survey of general biological principles, including modern genetics, ecology, evolution and human organ systems. Prerequisite: None. The course serves as preparation for other college biology courses and is suitable for students who have taken no previous science.

3100 - PRINCIPLES OF BIOLOGY 1 4 credits
An introductory course designed to meet the needs of the student who has no background in chemistry or biology. It is a two-semester presentation of the basic concepts of life science for the transfer student who does not plan to major in science. The first semester provides a survey of fundamental biological concepts including: the cell theory, maintenance in plants and animals, reproduction and development, genetics, evolution and diversity and plants and animals in their environment. These concepts are reinforced and augmented by laboratory activities which investigate life processes in plants and animals. No prerequisites.

3101 - PRINCIPLES OF BIOLOGY 2 4 credits
The second semester is a continuation of 3100 and examines in greater depth the concepts presented in Principles of Biology 1. Certain concepts covered in the first semester are expanded in order to gain an understanding of the function of the human body and man's interaction with his environment, while others are examined on a molecular level to comprehend the cellular approach to modern biology. Topics include: Biochemistry, Human Anatomy and Physiology, Reproduction and Development, Modern Genetics, Modern Evolution and Ecology. Prerequisite: 3100 - Principles of Biology 1.

3104/3105 - HUMAN ANATOMY & PHYSIOLOGY FOR MENTAL HEALTH/HUMAN SERVICES 3 credits each
This course is a study of the organization of the human body. No previous biological background is required. The anatomy & physiology of the body are studied from a cellular level to its various organ systems. Emphasis is placed on the regulatory systems of the body, particularly the nervous system. This is a two semester course combining lecture and appropriate demonstrations of physiological function to emphasize various concepts of body homeostasis. Open to Mental Health/Human Service students only. No Prerequisites.

3130 - BIOLOG Y OF MAN 4 credits
This course is designed to meet the needs of the student who has no background in biological science. Basic biological concepts are presented with emphasis on the human body. This is a one-semester program and may be used for students who require 4 credit hours in a lab science. It is recommended for students enrolled in the Court Reporting Program. No prerequisites.

3132 - HISTOLOGY 4 credits
A study of the microscopic anatomy of cells, tissues and organs as related to function. Emphasis is on mammalian systems. Discussion of microtechnique, electronphotomicroscopy and tissue culturing will be introduced. Prerequisites: Biology (3080, 3081); Anatomy and Physiology (3091, 3092); Human Biology (3077, 3078); or permission of instructor.

3134 - EMBRYOLOGY 4 credits
This course will expose the student to the fundamental growth processes and mechanisms that govern normal growth and development in the chick and pig embryos. Emphasis will be placed on the development of major organs and organ systems and how these systems develop into normal adult structure. Laboratory experiments, models and slides will be used to reinforce the basic principles of normal development and thus provide a basis for the discussion of abnormal development. Prerequisites: Biology (3080, 3081); Biology (3100, 3101); Anatomy and Physiology (3090, 3091); or permission of instructor.

3136 - GENETICS 3 credits
An introduction to the principles of classical and biochemical genetics, surveying microbial genetics, population genetics and human heredity. Laboratory experiments are designed to demonstrate the major principles discussed in lecture. PREREQUISITE: General Biology or permission of instructor.

3138 - BIOCHEMISTRY FOR HEALTH SCIENCES 3 credits
An introduction to biochemical principles. Emphasis is on the major metabolic pathways, the mechanisms of enzyme action, bioenergetics and the role of hormones and other regulatory substances. Prerequisites: General Biology, Chemistry or permission of instructor.

3139 - BIOLOGIA EN ESPANOL 1 4 creditos
Curso introductorio disenado para el estudiante que no tiene ninguna experiencia en el lcampe de la biologia y de la quimica. La duracion del curso es deldos semestres y esta disenado para el estudiante que no piensa concentrar se en las ciencias. El primer semestre provee un estudio del diferentes fundamentos biologicos que incluyen: la teoria celular, el mantenimiento de las plantas y animales, reproduccion y desarrollo, genetica, evolucion. y diversidad. Los conceptos del curso seran reenforzados y domplementados por las actividades del laboratorio por la cual se inves tigaran los procesos de la vida de las plantas y de los animales. PREREQUISITO: Ninguno.

3140 - BIOLOGIA EN ESPANOL 2 4 creditos
El segundo semestre es una continuacion de 3139, y examina mas a fondo los conceptos presentados en la Biología del primer semestre. Algunos conceptos presentados en el primer semestre sleran expandidos de manera de tener un mejor entendimiento del cuerpo humano y de la relacion del hombre con so ambiente; mientras y otros se examinaran a un nivel molecular para comprender el acercamiento celular a la biología moderna. Topics que incluye: Bioquímica, Anatomía Humana y Fisiología, Reproducción y Desarrollo, Genética Moderna, Evolución Moderna y Ecología. PREREQUISITO: 3139 Biología 1.

3145 - APPLIED PHYSIOLOGY

4 credits

This course takes various concepts in human physiology and by a lecture-laboratory approach the physiological principles are explained and illustrated by laboratory experience and clinically oriented tests. The instrumentation and methodology used in studying physiology and making clinical evaluation is emphasized. Aspects of the cardiovascular, respiratory, excretory, immune and nervous systems are investigated in this course. PREREQUISITES: Anatomy & Physiology 3091 & 3092.

CHEMISTRY

3002 - CHEMISTRY 1

4 credits

A study of the fundamental principles of chemistry in relation to the properties, composition and structure of matter. A primary aim of the course is to prepare students for subsequent courses in the technologies. Chemistry 1 is a one-semester terminal chemistry course. Three one-hour lectures per week, one three-hour lab. Prerequisite: Concurrent Math 2321-2323 and one year of high school physical science or equivalent.

3003 - CHEMISTRY OF LITHOGRAPHY 2

4 credits

Topics in chemistry relating to the graphic arts including photography and photographic processes, colors, inks and printing. Laboratory.

3005 - GENERAL CHEMISTRY 21

4 credits

An introductory course in general chemistry designed to parallel the first year chemistry courses offered at universities for science and engineering students. Modern theories of chemical reactions, chemical bonding, atomic and molecular structures are emphasized. Three one-hour lectures per week, one three-hour lab. Prerequisites: One year of High School Physical Science and Math (2334) or equivalent.

3006 - GENERAL CHEMISTRY 22

4 credits

A continuation of Chemistry 21. Equilibrium reaction rates are stressed. The student is introduced to basic organic chemistry and quantitative analysis. Prerequisite: Chemistry 21 (3005). Three one-hour lectures per week, one three-hour lab.

3009 - AUTOMOTIVE CHEMISTRY

4 credits

A study of specialized topics which are of particular interest in automotive technology. Topics covered are petroleum and how it is refined, gasoline, diesel fuel, gaseous fuels, atmospheric pollution, lubrication and lubricants, the chemistry of batteries, corrosion, hydraulic fluids and antifreeze compounds. The laboratory work consists of selected experiments with various small engines and oil and fuel testing apparatus. Prerequisite: 3002 - Chemistry 1.

3033 - BASIC SCIENCE 1

4 credits

Introduction to experimental chemistry, using very frequent experiments and simple arithmetic. Emphasis on development of the student's confidence, initiative and self-reliance. Topics treated are: measures; characteristic properties; separation; decomposition and synthesis; constant proportions, atoms and molecules. PREREQUISITE: None. The course serves as preparation for other college chemistry courses and is suitable for students who have taken no previous science.

3036 - CIENCIA BASICA 1 (BASIC SCIENCE 1) 4 créditos

Course contents same as 3033. Introducción a la química experimental, usando bien frecuentemente experimentos y aritmética simple. Enfasis en el desarrollo de la confianza en sí mismo e iniciativa del estudiante. Los tópicos a tratar son: Medidas, Propiedades Características, Separación, Descomposición y Síntesis, Proporciones Constantes, Atomos y Moléculas. PRE-REQUISITO: Ninguno. El curso sirve como preparación para otros cursos de química de colegio, y es adecuado para aquellos estudiantes que no han tenido previamente ciencias.

3061 - INDEPENDENT CHEMISTRY STUDY 1 1,2,3 or 4 cr.
Independent study or laboratory project in Chemistry under direction of an instructor. Prerequisite: Permission of the Department Chairman.**3062 - INDEPENDENT CHEMISTRY STUDY 2** 1,2,3 or 4 cr.
A continuation of 3061. Prerequisite: 3061 and permission of Department Chairman.**3086 - CHEMISTRY 11** 4 credits

An introduction to the chemical properties of matter, chemical structure and inorganic chemistry. The laboratory work investigates both physical and chemical principles and introduces the student to analytical procedures. Laboratory. Prerequisite: Two years of algebra plus one year of Chemistry.

3087 - CHEMISTRY 12 4 credits

A continuation of Chemistry 11 with an introduction to analytical chemistry including both volumetric and gravimetric analyses. The laboratory work is designed to apply the analytical principles covered in lecture. Prerequisite: 3086.

3095 - SCIENCE & TECHNOLOGY IN SOCIETY 3 credits

A non-technical course which explores the practical, social and ethical questions raised by science and technology. The ability of social institutions to cope with technological questions, the role of experts in government and evaluating the secondary effect of technology will be covered. These problems will be approached using both general readings and case studies of the ABM issue, the Montague atomic reactor controversy and other current debates.

3106 - ORGANIC CHEMISTRY 4 credits

A one-semester survey course in organic chemistry at the university level. Reactions, synthesis and properties of organic compounds will be emphasized. Mechanisms of organic reactions and the structure of organic molecules will be studied. Three one-hour lectures per week, one three-hour lab. Prerequisite: Chemistry 22(3006) or permission of instructor.

3109 - GENERAL CHEMISTRY 101 4 credits

A one-year general chemistry course for students in the Health Sciences and for transfer students who do not wish to major in a science or engineering. The first semester of the course will consist of a study of the general principles of inorganic chemistry, stressing concentration, dilution, equilibrium and descriptive chemistry. Three one-hour lectures per week, one three-hour lab. Prerequisite: Math 2321-22-23 and one year of high school laboratory science or permission of instructor.

3110 - GENERAL CHEMISTRY 102 4 credits

The second semester will concentrate on organic and biochemistry. Prerequisite: General Chemistry 101 (3109). Three one-hour lectures per week, one three-hour lab.

3111-3118 - GENERAL CHEMISTRY 21 & 22

1 cr. per module

3111 - MODULE 1

Units and conversions, atomic structure, atomic weight, mole concept, balancing equations, theoretical yields.

3112 - MODULE 2

Gases, pressure, Boyle's, Charles', Guy Lussac's and Dalton's Laws, ideal and real gases, kinetic theory.

3113 - MODULE 3

Periodic Table, electronic configuration of atom, quantum theory, bonding molecular geometry and bonding.

3114 - MODULE 4

Physical properties in relation to structure, changes in states, solutions.

3115 - MODULE 5

Equilibrium.

3116 - MODULE 6

Thermodynamics and rates of reaction.

3117 - MODULE 7

Acids and bases.

3118 - MODULE 8

Oxidation, reduction, introduction to organic chemistry. Prerequisites: Same as Chemistry 21 (3005). Each module includes four laboratories which must be completed before the next module can be started.

3120 - BIOCHEMISTRY

4 credits

A one-semester course in biochemistry on the university level. The structure, properties and reactions of biological compound will be studied. Three one-hour lectures per week, one three-hour lab per week. Lecture may be taken without laboratory. Prerequisite: One semester of organic chemistry or permission of instructor.

3125 - ORGANIC CHEMISTRY 1

4 cr. w/lab, 3 cr. no lab

A one-year course in organic chemistry at the university level. Reaction, synthesis and mechanism of organic reactions will be studied. This course is designed for transfer students with majors in chemistry, biology, pre-med or pre-dental. Three three-hour lectures per week, one four-hour lab per week. Lecture may be taken with no lab. Prerequisite: Chemistry 22 (3006) or permission of instructor.

3126 - ORGANIC CHEMISTRY 2

4 cr. w/lab, 3 cr. no lab

A continuation of Organic Chemistry 1 (3125).

3127 - INSTRUMENTAL ANALYSIS

3 credits

The theory and practice of modern analytical methods utilizing spectroscopic, chromatographic and colorimetric techniques will be stressed. The laboratory will include selected experiments having clinical and industrial relevance. Prerequisites: General Chemistry (3006 or 3110) or permission of the instructor.

3128 - QUANTITATIVE ANALYSIS

4 credits

An introductory course in quantitative methods of analysis. Gravimetric, laboratory volumetric and colorimetric methods will be used primarily. Prerequisites: General Chemistry 22 (3006) and Math (2334).

MATHEMATICS

2001 - INDEPENDENT STUDY OF MATHEMATICS

1,2,3 or 4 cr.

Independent study of special topics in mathematics under the direction of an instructor. Prerequisite: Permission of the Department Chairman.

2002 - INDEPENDENT STUDY OF MATHEMATICS

1,2,3 or 4 cr.

Continuation of 2001. Prerequisite: 2001 and permission of the Department Chairman.

2008 - MATHEMATICS 15

3 credits

Rational numbers including percentage and related business problems, reductions and conversions, algebraic operations, solutions of linear equations, plane geometric figures and an introduction to trigonometry. Restricted to Landscape and Graphic Arts students. Prerequisite: Math 2313 or equivalent.

2009 - MATH. 16 COMPUTER LOGIC

3 credits

Introduction to classical logic, Boolean algebra and binary arithmetic as applied to the operation of mechanical, electro-mechanical and electronic devices. Prerequisite: Mathematics 2343.

2012 - MATHEMATICS 22

4 credits

Indefinite and definite integration of algebraic functions. Differentiation and integration of transcendental functions. Techniques of integration including trigonometric substitutions, integration by parts, method of partial fractions and completing the square. Computations of plane areas, volumes of solids of revolution, arc lengths, surface areas and centers of masses of volumes, areas and arc lengths with definite integrals. Equivalent to Mathematics 2354-57.

2013 - MATHEMATICS 23

4 credits

Solid analytic geometry and vectors, infinite series including Taylor's Theorem, partial derivatives, gradient, total differential, line integrals, multiple integration, linear algebra, vector spaces and vector products. Equivalent to Mathematics 2358-2361. Prerequisite: Mathematics 22-2012.

2014 - MATHEMATICS 24

4 credits

Classical methods of solution of first order and linear higher order ordinary differential equations. Laplace Transform solutions of linear ordinary differential equations. Power series solutions of linear ordinary differential equations including Bessel's and Legendre's differential equations. Equivalent to Mathematics 2362-65. Prerequisite: Mathematics 23 (2013) or its equivalent.

2015 - STATISTICS & QUALITY CONTROL

3 credits

An introduction to basic statistics. Construction and use of

control charts, the use of sampling plans and related topics. The organization of a quality control department is considered with emphasis on the functions of its components. Prerequisite: Mathematics 2343.

2016 - STATISTICS 3 credits

Measures of central tendency and variability; the normal and binomial distributions; hypothesis testing; interval estimations for mean and variance; sampling techniques; correlation. Prerequisite: Mathematics 2333 or Finite Math 1 (2080).

2020 - ENGINEERING MATHEMATICS 3 credits

Review of power series solutions of ordinary differential equations; Bessel Functions; Fourier series; Sturm-Liouville systems; Laplace transformations; elementary partial differential equations and applications; introduction to complex variables. Prerequisite: Mathematics 24 (2014).

2076 - CONTEMPORARY MATHEMATICS 1 3 credits

Concepts of set theory and symbolic logic, mathematical systems, systems of numeration, structural properties. Development of the real number system: natural numbers-integers-rationals-reals. Prerequisite: 2313 or one year of high school algebra.

2077 - CONTEMPORARY MATHEMATICS 11 3 credits

Sentences in one variable and systems of sentences in two variables. Metric and nonmetric geometry, introduction to coordinate geometry. Introduction to statistics. Prerequisite: 2076.

2080 - FINITE MATHEMATICS 1 3 credits

Sets, functions and relations, logic, linear programming, analytical geometry, probability and non-linear curves. PREREQUISITE: Two years of high school algebra or Math 2323.

2081 - FINITE MATHEMATICS 2 3 credits

Differential and integral calculus, vectors and matrices, Markov Chains. PREREQUISITES: Finite Mathematics 1.

2082 - ANALYTIC GEOMETRY & CALCULUS 1 3 credits

Introduction to analytic geometry, functions, limits and derivatives. Differentiation of algebraic functions and applications. Prerequisite: Mathematics 2343 or its equivalent.

2083 - ANALYTIC GEOMETRY & CALCULUS 2 3 credits

Integral calculus and applications; functions of several variables; partial differentiation; solid analytic geometry; vectors. Prerequisite: Mathematics 2082.

2084 - MATHEMATICS OF RADIOLOGY 3 credits

This is a review and presentation of the math necessary for the intelligent and versatile use of x-ray equipment. It is also the basis of the math needed for nuclear medicine and radiation therapy and is also taken by these students.

2085 - ANALYTIC GEOMETRY

3 credits

Functions and graphs; the straight line, conic sections; transformation of coordinates; polar coordinates; solid analytic geometry; vectors; cylindrical and spherical coordinates. Prerequisite: Two years of high school algebra and trigonometry or Mathematics 2343.

2086 - CALCULUS 1

3 credits

Functions; limits; continuity; differentiation of algebraic functions and applications; integration and applications. Prerequisite: Analytic Geometry (2085).

2087 - CALCULUS 2

3 credits

Transcendental functions; techniques of integration; functions of several variables. Prerequisite: Calculus 1 (2086).

2088 - CALCULUS 3

3 credits

Partial differentiation; multiple integrals, infinite series; matrices and determinants. Prerequisite: Calculus 2 (2087).

2089 - LINEAR ALGEBRA

3 credits

Geometric vectors; vector spaces; systems of linear equations; inner product spaces; linear transformations and matrices; determinants; Eigenvalues and Eigenvectors isometrics; linear and bilinear forms. Corequisite: Calculus 3 (2088) or mathematics 23 (2013). Prerequisite: Calculus 2 (2087) or mathematics 22 (2012).

2090 - DIFFERENTIAL EQUATIONS

3 credits

Types and applications of differential equations of the first order; integral curves; linear differential equations with constant coefficients; applications. Prerequisite: Calculus 3 (2088).

2092 - INTRODUCTORY ANALYSIS

3 credits

Topology of the real number system. Limits and continuity. Differentiation. Partial Differentiation. Riemann-Stieltjes integration. Prerequisite: Mathematics 2358-62.

2101 - MATEMATICAS

1 crédito

Course contents same as 2301. El concepto de números enteros positivos, el cero y el sistema de lugar para el valor. Suma, resta, multiplicación y división de números enteros positivos. Exponentes cuadrado perfecto, raíz cuadrada, números primos, números compuestos y factorización prima.

2102 - MATEMATICAS

1 crédito

Course contents same as 2302. Fracciones y decimales. Suma, resta, multiplicación y división de ambos, decimales y fracciones. Reduciendo fracciones y convirtiendo fracciones a decimales. Pre-requisito: 2101 o su equivalente.

2103 - MATEMATICAS

1 crédito

Course contents same as 2303. Cambiar porcentaje a fracciones y fracciones a porcentaje. La solución de varios tipos de

problemas de porcentos. Una introducción a numerales denominados. Geometría plana. Pre-requisito: 2102 o su equivalente.

2111 - MATEMATICAS 1 crédito
Course contents same as 2311. La relación de los números enteros positivos y el cero con conjuntos, numerales y números. Operaciones binarias de suma, resta, multiplicación y división. Soluciones de ecuaciones lineares simples. Propiedades de los números enteros positivos y el cero. Las cinco propiedades de los exponentes. Pre-requisito: 2103 o su equivalente.

2112 - MATEMATICAS 1 crédito
Course contents same as 2312. Suma, resta, multiplicación y división de los números enteros. Simplificaciones de expresiones numerales conteniendo enteros, valores absolutos y exponentes. Simplificación de expresiones variables. Pre-requisito: 2111 o su equivalente.

2113 - MATEMATICAS 1 crédito
Course contents same as 2313. Propiedades y axiomas de los números reales. Suma, resta, multiplicación y división de expresiones fraccionales. Pre-requisito: 2112 o su equivalente.

INDIVIDUAL LEARNING CENTER (MATHEMATICS)

The following mathematics courses are offered:

| | | | | |
|------|------|------|------|------|
| 2301 | 2311 | 2321 | 2331 | 2341 |
| 2302 | 2312 | 2322 | 2332 | 2342 |
| 2303 | 2313 | 2323 | 2333 | 2343 |

2301 - MATHEMATICS 1 credit
The concept of whole numbers and the place value system. Addition, subtraction, multiplication and division of whole numbers. Exponents, perfect square roots, primes, composites and prime factoring.

2302 - MATHEMATICS 1 credit
Fractions and decimals. Addition, subtraction, multiplication and division of both fractions and decimals. Reducing fractions and converting fractions to decimals. Prerequisite: 2301 or its equivalent.

2303 - MATHEMATICS 1 credit
Changing percentage to fractions and fractions to percentage. The solution of the various types of percentage problems. An introduction to denominate numerals. Elements of plane geometry. Prerequisite: 2302 or its equivalent.

2311 - MATHEMATICS 1 credit
The relationship of whole numbers to sets, numerals to numbers. Binary operations of addition, subtraction, multiplication and division. Solutions to simple linear equations. Five fundamental properties of equations. Properties of exponents. Prerequisite: 2303 or its equivalent.

2312 - MATHEMATICS 1 credit
The set of integers. Addition, subtraction, multiplication and

division of integers. Operations with variable expressions. Introduction to solving linear equations. Prerequisite: 2311.

2313 - MATHEMATICS 1 credit
Rational, irrational and real numbers. Properties of fractional expressions. Multiplication and division, addition and subtraction of first degree fractional expressions. PREREQUISITE: 2312.

2211 - MATHEMATICS 1-3 credits
Same course content as 2311, 2312 and 2313, except courses are taught on a lecture basis rather than a programmed basis.

2321 - MATHEMATICS 1 credit
Multiplication and division of algebraic expressions. Factoring. Solving linear quadratic equations. Operations with fractional expressions. Solving fractional and absolute value equations. Solving inequalities.

2322 - MATHEMATICS 1 credit
Negative exponents and scientific notation. Introduction to radicals and fractional exponents. Operations with radical expressions. Using the quadratic formula and solving equations with radical expressions. PREREQUISITE: 2321.

2323 - MATHEMATICS 1 credit
The concept of an ordered pair and the real number plane. Methods of graphic linear, quadratic and absolute value equations. Systems of linear equations solved analytically and graphically. Functions and relations are defined and applied. PREREQUISITE: 2322 or its equivalent.

2221 - MATHEMATICS 1-3 credits
Same course content as 2321, 2322 and 2323, except courses are taught on a lecture basis rather than a programmed basis.

2331 - MATHEMATICS 1 credit
Angles and their measure, Pythagorean Theorem, an introduction to right triangle trigonometry and vectors. PREREQUISITE: 2323 or its equivalent.

2332 - MATHEMATICS 1 credit
Introduction to sets, graphs and field properties, factoring, algebraic fractions, exponents and radicals. PREREQUISITE: 2331.

2333 - MATHEMATICS 1 credit
Solution sets of linear and quadratic equations, relations and functions, both linear and quadratic. PREREQUISITE: 2332.

2231 - MATHEMATICS 1-3 credits
Same course content as 2331, 2332 and 2333, except courses are taught on a lecture basis rather than a programmed basis.

2334 - MATHEMATICS—SLIDE RULE 1 credit
Scientific notation, slide rule, multiplication and division, ratio and proportion, square and cube roots, logarithms and trigonometric functions. PREREQUISITE: Mathematics 2303 or its equivalent. Also the use of various calculators; their functions, limitations, etc. in conjunction with the use of the slide rule for mathematical calculations will be taught. The course would begin with basic four function calculators and advance to the more complex models.

2341 - MATHEMATICS 1 credit
Properties and applications of special functions and relations, conic sections variation, inverse functions, exponential functions. PREREQUISITE: 2333 or its equivalent.

| | | |
|---|-------------|--|
| 2342 - MATHEMATICS | 1 credit | |
| Logarithms and interpolation, computation using logarithms, solution sets of exponential, radical and quadratic equations. | | |
| PREREQUISITE: 2341. | | |
| 2343 - MATHEMATICS | 1 credit | |
| The Binomial Theorem, sequences and series, complex numbers, properties of logarithms, trigonometric functions and their graphs, the law of sines and law of cosines. | | |
| PREREQUISITE: 2342. | | |
| 2344 - MATHEMATICS | 1 credit | |
| Limits, basic concepts of differential, calculus and applications, and basic concepts of integral calculus and applications. PREREQUISITE: 2333 or its equivalent. | | |
| 2241 - MATHEMATICS | 1-4 credits | |
| Same course content as 2341, 2342, 2343 and 2344, except courses are taught on a lecture basis rather than a programmed basis. | | |
| 2350 - MATHEMATICS 1 | 1 credit | |
| The Cartesian plane and analytic geometry of the straight line and circle. Functions, and functional expressions. | | |
| PREREQUISITES: Mathematics 2343 or its equivalent. | | |
| 2351 - MATHEMATICS 1 | 1 credit | |
| Limits, continuity and the derivatives of algebraic functions. Chain rule and implicit differentiation. PREREQUISITE: Mathematics (2350) or its equivalent. | | |
| 2352 - MATHEMATICS 1 | 1 credit | |
| Applications of the derivative to curve sketching. Maxima/minima theory and related rates. The differential and differential approximation. PREREQUISITE: Mathematics (2351) or its equivalent. | | |
| 2353 - MATHEMATICS 1 | 1 credit | |
| Indefinite and definite integration. Fundamental theorem of calculus. Introduction to separable differential equations, rectilinear motion problems, work and fluid pressure. Computations of plane areas using summation notation and the definite integral. PREREQUISITE: Mathematics 2352 or its equivalent. | | |
| 2354 - MATHEMATICS 2 | 1 credit | |
| Vectors in 2 dimensions; conic sections; limits and continuity (geometric approach). PREREQUISITE: Mathematics 2353 or its equivalent. | | |
| 2355 - MATHEMATICS 2 | 1 credit | |
| Differentiation and integration of trigonometric, inverse trigonometric, logarithmic, exponential, hyperbolic and inverse hyperbolic functions. PREREQUISITE: Mathematics (2354) or its equivalent. | | |
| 2356 - MATHEMATICS 2 | 1 credit | |
| Parametric equations; polar co-ordinates; techniques of integration: substitution, trigonometric integrals, trigonometric substitution, integral of form $ax^2 + bx + c$, integration by parts. PREREQUISITE: Mathematics 2355 or its equivalent. | | |
| 2357 - MATHEMATICS 2 | 1 credit | |
| Applications of the definite integral. Volumes of solids of revolution by the disk and shell methods, arc lengths and surface areas. Centers of masses of volumes, areas and arc lengths. Improper integrals. Limits and continuity. | | |
| PREREQUISITE: Mathematics 2356 or its equivalent. | | |
| 2358 - MATHEMATICS 3 | 1 credit | |
| Indeterminant forms; convergent and divergent sequences and series. Power series. Taylor and Maclaurin series. Computations with series. PREREQUISITE: Mathematics 2357 or its equivalent. | | |
| 2359 - MATHEMATICS 3 | 1 credit | |
| Solid analytic geometry and vectors. Functions of two variables. Partial differentiation and applications. | | |
| PREREQUISITE: Mathematics (2358) or its equivalent. | | |
| 2360 - MATHEMATICS 3 | 1 credit | |
| Multiple integration in rectangular, cylindrical, and spherical co-ordinates. PREREQUISITE: Mathematics 2359 or its equivalent. | | |
| 2361 - MATHEMATICS 3 | 1 credit | |
| Applications of multiple integration: volume, mass, center of mass, moments of inertia, surface area. Line integrals. | | |
| PREREQUISITE: Mathematics 2360 or its equivalent. | | |
| 2362 - MATHEMATICS 4 | 1 credit | |
| Introduction to ordinary differential equations and their terminology. Classical methods of solution of first order differential equations. PREREQUISITE: Mathematics (2361) or its equivalent. | | |
| 2363 - MATHEMATICS 4 | 1 credit | |
| A study of linear higher order differential equations using classical methods of solution. Methods included are the differential operator technique, methods of undetermined coefficients, D'Alembert's reduction of order technique and variation of parameters. PREREQUISITE: Mathematics (2362) or its equivalent. | | |
| 2364 - MATHEMATICS 4 | 1 credit | |
| Laplace Transform solutions of linear ordinary differential equations. The Gamma, Pulse and Impulse functions. | | |
| PREREQUISITE: Mathematics (2363) or its equivalent. | | |
| 2365 - MATHEMATICS 4 | 1 credit | |
| An introduction to the solution of systems of linear differential equations with constant co-efficients. Matrix methods for both homogeneous and non-homogeneous systems are developed. The Laplace Transform technique is applied primarily to systems with sectionally continuous forcing functions. This module also reviews the concept of a power series and develops the power series technique for solving linear ordinary differential equations. The method of Frobenius is used for solving equations with regular singular points. Bessel functions and Bessel's differential equations and Legendre Polynomials and Legendre's differential equation are discussed. PREREQUISITE: Mathematics 2364 or its equivalent. | | |

PHYSICS

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| 3010 - PHYSICAL SCIENCE 1 | 4 credits |
| A laboratory science course for non-science students. Introduction to the intellectual process of science as a window | |

onto nature by means of many simple experiments and class discussions. Topics treated are the physical and chemical properties of matter and the atomic model. PREREQUISITE: Mathematics 2313 or High School Algebra 2.

3011 - PHYSICAL SCIENCE 2 4 credits
Continuation of 3010 Physical Science 1. Energy, and its measurement on the local and global scale, is used as a unifying topic to explore electricity, heat, motion and radiation. PREREQUISITE: 3010 Physical Science 1 or permission.

3012 - PHYSICS 1 4 credits
A course on mechanics and heat. Very frequent experiments, and problem assignments, introduce the student to the following: systems of measurement, accelerated motion, force, kinetic and potential energy, momentum, composition and resolution of forces and statics. Also heat energy and its conservation. PREREQUISITE: Mathematics 2331 (Trigonometry).

3013 - PHYSICS 2 4 credits
A study of magnetism, electricity and light. lectures, demonstrations, problem assignments and laboratory work are carried on in the following fields: electrostatics, magnetism, resistance of conductors, Ohm's law, thermoelectricity, electrochemistry, electromagnetic induction, radio, illumination, mirrors, lenses, optical instruments, radiant energy, spectroscopy, polarization and recent discoveries in physics. PREREQUISITE: 3012.

3014 - PHYSICS 14 2 credits
Physics of solutions and gases, electricity and principles of hypo and hypothermia. PREREQUISITE: 2323 Mathematics.

3015 - PHYSICS 21 5 credits
Elementary mechanics, statics and dynamics; conservation of energy and momentum; conservation of angular momentum, heat and simple harmonic motion. PREREQUISITE: 2353 Mathematics.

3016 - PHYSICS 22 5 credits
A continuation of Physics 21 covering sound, light, electricity and magnetism; Gauss, Ampere and Faraday's Laws; electric and electromagnetic properties of materials; magnetic and electric circuits. PREREQUISITE: 3015, 2357.

3017 - PHYSICS 23 5 credits
Electromagnetic waves, Maxwell's equations, introduction to relativity, atomic, nuclear and particle physics. PREREQUISITE: 3016, 2361.

3029 - HISTORY & PHILOSOPHY OF SCIENCE 1 3 credits
This course treats the historical and philosophical development of science from the ancient Greeks, Babylonians and Egyptians to the end of the nineteenth century. The major scientific discoveries and their impact will be highlighted; the

interrelationships of science, religion and philosophy will be discussed.

3030 - HISTORY & PHILOSOPHY OF SCIENCE 2 3 credits
Science and technology in contemporary society. A non-technical course which explores the practical, social and ethical questions raised by science and technology. Questions such as: the ability of social institutions to cope with technological questions, the role of government and evolution of the secondary effects of technology will be covered. The problems will be approached using both general readings and case studies of the ABM issue, the Montague reactor controversy and other current debates. No prerequisites.

3031 - PHYSICS 11 4 credits
An introductory course covering fundamental concepts of mechanics, heat and sound. Laboratory. PREREQUISITE: 2331.

3032 - PHYSICS 12 4 credits
A continuation of Physics 3031, which is a prerequisite. Laboratory.



3034 - BASIC SCIENCE 2 4 credits
Introduction to experimental physics, through energy and its measurement in the form of electricity, heat, motion and radiation. Emphasis on development of the student's confidence, initiative and self-reliance. PREREQUISITE: Advised is 2303 Basic Arithmetic or 3033, Basic Science 1. However, this course serves as preparation for other college physics courses and is suitable for students who have taken no previous science.

3037 - CIENCIA BASICA 2 (BASIC SCIENCE 2) 4 créditos
Course contents same as 3034. Introducción a la física experimental, a través de energía y sus medidas en forma de electricidad, calor, movimiento y radiación. Enfasis en el desarrollo de la confianza en sí mismo e iniciativa del estudiante. PRE-REQUISITO: Se recomienda 2103 Aritmética Básica ó 3036 Ciencia Básica. Sin embargo, este curso sirve como preparación para otros cursos de física de colegio, y es apropiado para estudiantes que no han tenido previamente ciencias.

3038 - CIENCIA BASICA 3 (BASIC SCIENCE 3) 4 créditos
Course contents same as 3099. Introducción a la biología experimental, a través de la interpretación de mucho experimentos simples. Enfasis en el desarrollo de la confianza en sí mismo e iniciativa del estudiante. Estudio de principios generales de la biología, incluyendo genética moderna, ecología, evolución y el sistema de órganos humanos.
PRE-REQUISITO: Ni nguno. El curso sirve como preparación para otros cursos de biología de colegio, y es apropiado para aquellos estudiantes que no han tenido previamente ciencias.

3041 - INDEPENDENT STUDY-PHYSICS 1 1,2,3 or 4 cr.
Independent study or laboratory project in physics under direction of instructor. **PREREQUISITE:** Permission of the Department Chairman.

3042 - INDEPENDENT STUDY-PHYSICS 2 1,2,3 or 4 cr.
A continuation of 3041. **PREREQUISITE:** 3041 and permission of the Department Chairman.

3043, 3044, 3045, 3046, 3047, 3048 PROGRAMMED INTRODUCTORY PHYSICAL SCIENCE

1 credit each module

3043 - Measures for Matter and Density

3044-Characteristic Properties of Matter

3045-Solubility

3046-Separation of Mixtures

3047-Compounds and Elements

3048-Radioactivity and Atomic Modules

3064 to 3076 - PROGRAMMED PHYSICS 1 cr. each module
These modules correspond to Physics 21, 22 and 23.

PROGRAMMED PHYSICS 21

3064 - MODULE 1-KINEMATICS AND DYNAMICS

a. Vectors and mathematical preliminaries, b.Kinematics: Motion in one dimension, c. Kinematics: Motion in two dimensions, d. Dynamics: Newton's Three Laws of Motion.

3065 - MODULE 2 - CONSERVATION LAWS & APPLICATIONS

a. Work and energy, b. Conservation of energy, c. Conservation of linear momentum, d. Collisions: Applications of b and c.

3066 - MODULE 3 - ROTATIONAL KINEMATICS & DYNAMICS

a. Rotational Kinematics: Analogues with linear motion, b. Rotational dynamics: Analogues with linear motion, c. Conservation of angular momentum, d. Equilibrium of Rigid Bodies.

3067 - MODULE 4 - OSCILLATIONS, SIMPLE HARMONIC MOTION

a. Oscillations, b. Energy considerations in SHM, c. Relation between SHM and Uniform Circular Motion.

3068 - MODULE 5 - UNIFYING MODULE, COMBINED PROBLEMS

a. Review dynamics: Applications; Gravitational field, b. Combined Problems: Applications of SHM and Gravitation 1.SHM liquid in a tube, 2. Simple pendulum, 3. Particle executing SHM through a tunnel in the earth, 4. Block colliding with block on a spring, 5. Ball in a well, 6. Torsion pendulum.

PROGRAMMED PHYSICS 22

3069-MODULE 1

1. Charge and matter, 2. The electric field, 3. Gauss' Law, 4. Electric Potential.

3070 - MODULE 2

1. Capacitors and Dielectrics, 2. Current and resistance, 3. Electromotive Force and Circuits

3071 - MODULE 3

1. The magnetic field, 2. Ampere's Law, 3. Faraday's Law, 4. Inductance.

3072 - MODULE 4

1. Magnetic Properties of Matter, 2. Electromagnetic Oscillations, 3. Electromagnetic Waves.

PROGRAMMED PHYSICS 23

3073 - MODULE 1

1. Temperature, 2. Heat and First Law of Thermodynamics, 3. Kinetic Theory of Gases, 4. Entropy and the Second Law of Thermodynamics.

3074 - MODULE 2

1. Fluid Mechanics, 2. Waves in Elastic Media, 3. Sound Waves

3075 - MODULE 3

1. Geometrical Optics, 2. Interference, 3. Diffracting, Grating and Spectra.

3076 - MODULE 4

1. Planck's Radiation Formula, 2. Photoelectric Effect, 3. Einstein Photon Theory, 4. Compton Effect, 5. Line Spectra-Atomic Models, 6. Correspondence Principle.

3083 - RADIOLOGIC PHYSICS 1

4 credit
Physical Principles of Radiology and Nuclear Medicine Principles of electrostatics and magnetism are directed toward the understanding of direct current, circuit elements, alternating current, transformers and x-ray generating circuits. Photon detection by survey meters, table-top counter diagnostic systems and ultrasonic imaging and diagnosis will be covered.

3084 - RADIOLOGIC PHYSICS 2

4 credit
A continuation of Radiologic Physics 1. Basic atomic and nuclear structure will be directed toward an understanding of radiation and radiationless transitions. Interaction of photons and elementary particles in matter will be discussed. Specific radiobiological effects from photons will be covered included are DNA, lymphatic systems, skeletal system and reproductive system.



3096 - INTRODUCTORY ASTRONOMY 1 4 credits

This is the first part of a two semester, transferable course. It begins with a historical overview and then concentrates on stars, stellar systems and galaxies. Laboratory.

3097 - INTRODUCTORY ASTRONOMY 2 4 credits

A continuation of Astronomy 1, this course deals with the formation and evolution of the solar system.
PREREQUISITES: 3096 or 3105. Laboratory.

3105 - EARTH & PLANETARY SCIENCE 1 4 credits

This course offers the study of the earth — its rocks and waters, its clouds, its size and shape and its place among the stars. The aim is to provide an understanding of how scientists go about studying an object as large as the earth. A detailed study of the earth sciences such as geophysics, geochemistry, meteorology, oceanography, planetary geology and physical geology will be presented for a more balanced view of the planet. Mathematical descriptions of geological phenomena will be avoided.

311, 3312, 3313, 3314 - PROGRAMMED PHYSICS

4 cr., 1 cr. per module

To accommodate programmed instruction in Physics 1, in which students proceed at their own rate.

3311 - MODULE 1

An introduction to mathematics for science. Includes units conversion, significant figures, scientific notation and elementary vector problems.

3312 - MODULE 2

Elementary mechanics starting with one dimensional kinematics and ending with Newton's Laws.

3313 - MODULE 3

Three interesting topics in Physics; universal gravitation, circular motion and momentum.

3314 - MODULE 4

A discussion of various forms of energy and their relationships. Some thermodynamics is included.

3315, 3316, 3317, 3318 - PROGRAMMED PHYSICS

4 credits; 1 credit per module

To accommodate programmed instruction in Physics 2, in which students proceed at their own rate.

3315 - MODULE 5

Electricity-Investigating the electrical structure of matter, Coulomb's Law, electrostatic and potential fields, Ohm's Law and electric currents.

3316 - MODULE 6

Magnetism-Investigating magnetic induction, magnetic properties of matter, Faraday's Law of induction and propagation of an electromagnetic field.

3317 - MODULE 7

Light-Study of reflection, refraction and the physical optics.

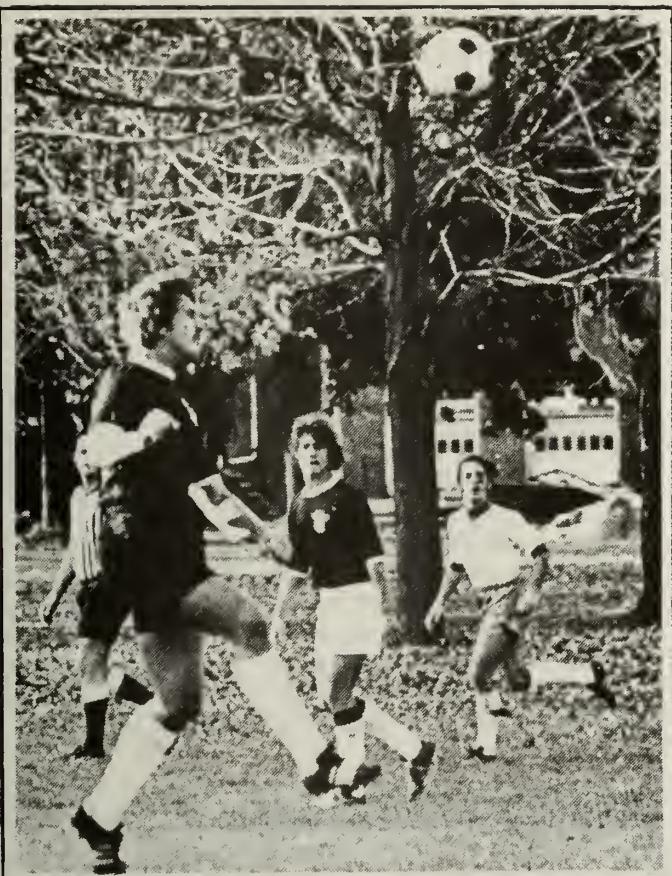
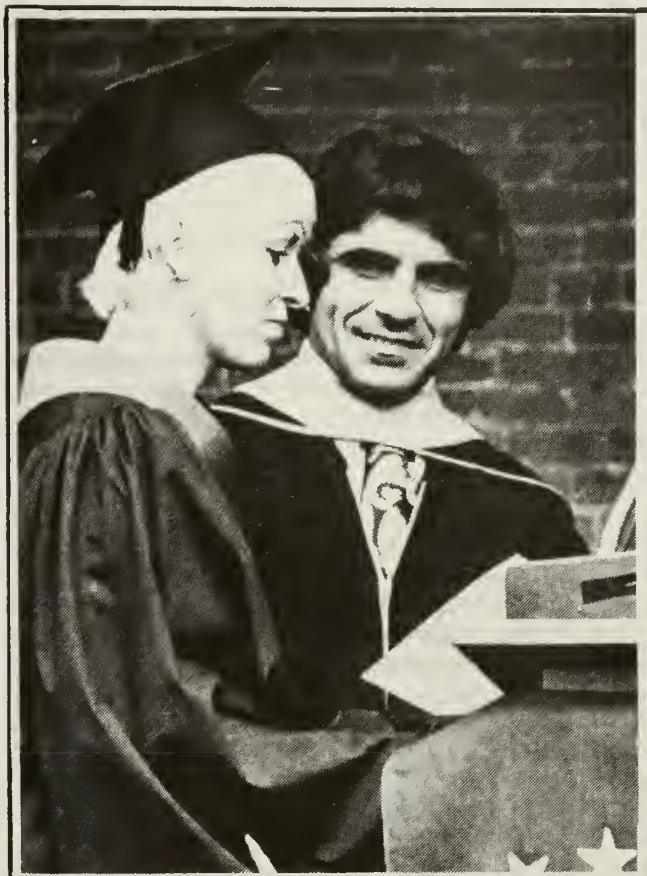


3318 - MODULE 8

Modern Physics. Lectures and study of recent discoveries in atomic and nuclear physics.



humanities



HUMANITIES

Minimum Grade Requirement: Liberal Arts and General Studies Transfer students must achieve a cumulative average of "C" (2.0). The Humanities minimum grade requirement policy is that students will pass an individual course with a grade of "D." They should, however, check with their own major to determine the cumulative minimum grade requirement for graduation or certification.

ART

1118 - DIRECTED STUDY IN ART Variable credit

Projects for advanced individual study by special arrangement with the instructor and approval of the Department and Division Chairmen. Students are expected to demonstrate willingness and ability to work on their own with minimal assistance.

8096 - ART HISTORY 1 3 credits

Art History 1 is a survey of the major visual arts (architecture, painting and sculpture) of the Western World from the cave paintings through Egypt, the ancient Near East, the Aegean, Greece, Rome, Islam, the Romanesque Period and the Gothic Period. The course is designed to help the student to understand the impulse behind the key monuments in the history of Western art. Slide-lecture instruction will follow Janson's "History of Art." Offered in the first semester only. Three in-class hours weekly.

8097 - BASIC DRAWING 3 credits

This course is an introduction to a variety of media (charcoal, ink, pencil, brush, pastels, etc.). A primary objective is to develop the student's technical skills used in drawing in order that the student will have the necessary tools for a personal visual expression. Emphasis is placed on unfolding the student's own means of representation. No previous art background is required. Offered in the fall and spring semesters. Five in-class hours weekly.

8101 - EARLY CHILDHOOD ART EDUCATION 3 credits

This is a course designed to familiarize teachers in training with how children use art activities as a means of growth and self-expression. The principle objective of the course is to develop an understanding of the need for creative experience for the very young child and to explore ways of structuring classroom situations which will allow for discovery, investigation, inventiveness and individuality. Although the main body of the course is aimed at the child who falls into the so-called "norm," attention is given to the problems of helping the exceptional child through the use of self-expression in the visual arts. Lecture/workshop classes meet three hours weekly.

8102 - ART HISTORY 2 3 credits

Art History 2 is a continuation of the study of the major visual art expressions of western man. The first semester course may be helpful, but it is not a prerequisite. Areas of study will include the late Gothic Period north of the Alps, the Renaissance, Baroque and Rococo art of Italy, Germany, France, Spain, Flanders, Holland and England. Emphasis is placed upon understanding the impulse behind man's artistic expressions and their links with the culture in which they are produced. Slide-lecture instructions will follow Janson's

"History of Art." Offered in the spring semester only. Three in-class hours weekly.

8104 - DRAWING COMPOSITION 3 credits

Drawing will be approached as a basis of composition and training in observation. Emphasis will be placed on developing perceptual awareness and critical self-evaluation as means toward growth in individual ability to express one's self visually. Students will be encouraged to explore areas of personal interest. Figure study is also included. PREREQUISITE: Basic Drawing or permission of instructor. Five in-class hours weekly.

8108 - PAINTING 1 3 credits

Easel painting in oils or acrylics. Based on elementary understanding of the physical properties of oil and/or acrylic media, the course will emphasize individual expression within the framework of instruction in techniques, principles of pictorial composition and elements of visual representation. The main objective of the course is to increase perceptual awareness in each student. PREREQUISITE or COREQUISITE: Basic Concepts of Two-Dimensional Design or Basic Drawing or permission of instructor. Offered in the fall and spring semesters. Five in-class hours weekly.

8109 - PAINTING 2 3 credits

Painting 2 is a continuation of Painting 1. Emphasis is placed on exploration of various media and methods of painting. Primary objectives of the course revolve around approaching an individual understanding of the artist's statement. PREREQUISITE: Painting 1 or permission of the instructor. Five in-class hours weekly.

8110 - PRINTMAKING: RELIEF 1 3 credits

Basic study of materials, techniques and aesthetic considerations peculiar to relief printmaking. Students cut their designs from blocks of wood and print their own work from the wood blocks. PREREQUISITE: or COREQUISITE: Basic Concepts of Two-Dimensional Design and/or Basic Drawing or permission of instructor. Offered in the fall and spring semesters. Five in-class hours weekly.

8111 - PRINTMAKING: RELIEF 2 3 credits

Advanced study of materials, techniques and aesthetic considerations. Emphasis is placed on individual expression. Basic knowledge of printmaking (Relief 1) or background in graphic arts with permission of instructor are required. Five in-class hours weekly.

8112 - BASIC CONCEPTS OF 2-DIMENTIONAL DESIGN 3 credits

The purpose of this course is to teach elementary design as a basis for any student to continue study in the field of fine arts, applied arts, graphic arts, as well as the arts in the technologies. Emphasis will be placed on understanding elements of design including volume, line, form, space, hue, value, and texture and the organization of the plastic elements into the principles of design, i.e., rhythm, unity, balance, contrast, emphasis, variety, movement, structure. Each of these basic concepts will be culminated in a project using a variety of materials. By permission of instructor. Offered in the fall semester only. Five in-class hours weekly. Fulfills liberal arts requirement.

8113 - BASIC CONCEPTS OF 3-DIMENTIONAL DESIGN

3 credits

The principle emphasis of the course is with the organization of space—an expansion of the students' design vocabulary previously developed in Basic Concepts of Two-Dimentional Design. Through various methods of exposure (such as experimentation with wood, paper, metal, plaster, etc.), the students develop solutions to problems in volume, space organization, mass and tension. Offered in spring semester only. Five in-class hours weekly. Fulfils liberal arts requirement. PREREQUISITE: Basic Concepts of Two-Dimensional Design (8112) or permission of instructor.

CE8115 - POTTERY 1

3 credits

A basic studio course stressing creative use of clay and related materials. Hand built and wheel thrown pottery, glazing and firing. Studio fee and limited enrollment.

CE before a course number indicates: Continuing Education (offered currently only in the Evening Division).

ENGLISH

1004 - ENGLISH COMPOSITION 1

3 credits

The purpose of this course is to acquaint students with prose writing, particularly sentence style, paragraphing, thesis development, and essay design. Students are encouraged to develop an individual style of writing, drawn from their own experience and contemporary readings. In addition, special attention is given to the writing of a research paper of moderate length.

1005 - ENGLISH COMPOSITION 2: AN INTRODUCTION TO LITERATURE

3 credits

This course involves the close reading and class discussion of fiction, poetry and plays, mostly modern, and essay assignments involving writing about literature. Emphasis is on literary form and the traditions of imaginative literature and on the role of individual literary works as expressions of universal human experience.

1006 - BUSINESS ENGLISH

3 credits

This course is designed to acquaint students with the techniques of business communications such as business letter style and form, reports, resumes and memoranda. The course also emphasizes the mechanics of style—capitalization, punctuation, sentence structure, etc.

1007 - FUNDAMENTALS OF SPEECH

3 credits

This is a course designed to acquaint students with several types of basic speeches. These speeches such as extemporaneous, formal, and impromptu will be studied, and students will be expected to deliver several oral presentations before their classes during the semester.

1008 - TECHNICAL REPORT WRITING

3 credits

Instruction has been organized to emphasize methods involved in the writing process. Special emphasis has been placed on the factors which the report writer must consider and the processes he must follow in writing a report. The student will become acquainted with the techniques of analyzing writing situation, methods of investigating the problem, organizing the report and preparing the final copy.

1009 - WORLD LITERATURE 1

3 credits

A close study in lecture and discussions of selected masterpieces of world literature representing different types of national origins, selected from the Bible, Greek, Roman, French, Italian and Spanish classics, stressing Hebrew, pagan, Christian and Humanist Ideals. The course emphasizes characteristic ideas, themes and attitudes from antiquity through the Renaissance, demonstrating our cultural continuity.

1010 - WORLD LITERATURE 2

3 credits

This course continues a survey of major authors and literary works in Western culture from the seventeenth to twentieth centuries.

1012 - ENGLISH LITERATURE 1

3 credits

This course consists of readings in English literature from the Anglo-Saxon period to the eighteenth century, especially Beowulf, Chaucer, Shakespeare, Spencer, Milton, Swift and Pope. Primary emphasis is placed on the close and critical reading of individual works, but the works are also studied as representatives of the major literary and intellectual movements in the history of English literature.

1013 - AMERICAN LITERATURE 1

3 credits

Through reading and discussion, we shall examine in this course the growth of American Literature from Puritan times to the Civil War, tracing the major developments in American art and thought by linking them with their European origins and parallels. Although we shall give some consideration to American literature as an expression of national life: political, social, religious, and intellectual, our chief emphasis will fall upon the essentially literary achievements of American writers in prose and poetry as they saw American life and problems, from Anne Bradstreet and William to Melville, Hawthorne, and Whitman.

1014 - AMERICAN LITERATURE 2

3 credits

A survey of major works of literature produced in America between 1860 and 1960. Among authors whose works may be considered are Twain, Dickinson, Crane, Hemingway, Fitzgerald, Faulkner and several contemporaries.

1015 - IRISH LITERATURE

3 credits

The course introduces the student to contemporary Irish Literature. It includes myths, legends and a general history of Ireland, with the focus on such writers as O'Casey, Synge, Yeats, O'Connor, Behan, Pearse, Heaney and Montague. Films and slides for visual enrichment are shown regularly.

1016 - INTRODUCTION TO JOURNALISM

3 credits

An introductory course designed to explore the overall area of journalism as related to producing the weekly student newspaper, "The Ram." The class is conducted as a workshop with instruction focused on news reporting, feature writing and page layout.

1017 - PRINCIPLES OF JOURNALISM

3 credits

An extension of Introduction to Journalism. This workshop class focuses on editing the weekly college newspaper, "The

Ram," the writing of columns, editorials and the in-depth feature.

1018 - CHILDREN'S LITERATURE 3 credits

Children's Literature is an elective one-semester survey course. The material includes study of: the history of children's literature; juvenile novels for children ages 8-12; picture books, their subject matter and illustrative techniques, for children ages 3-6; folktales and literary fairy tales; and children's poetry. The emphasis is on American publications.

1019 - ENGLISH LITERATURE 2 3 credits

This course is a continuation of English Literature 1 and consists of readings from the Romantic period to the twentieth century, especially the works of Wordsworth and Coleridge, Tennyson and Browning and Eliot and Joyce. The works are studies from the same perspective and with the same emphasis as in English Literature 1.

1020 - ADVANCED SPEECH 3 credits

Advanced techniques in the art of public speaking and group discussion. Attention will be paid to listening techniques and group involvement. Problems in interpersonal relations will be introduced and discussed. Leadership responsibilities will be stressed.

1023 - WOMEN IN LITERATURE 3 credits

Women in Literature is an elective one-semester course which examines the roles and stereotypes of women in various literary works. The readings are mostly modern short stories, novels, plays and poems by both women and men. Works by Anne Sexton, Virginia Woolf and D.H. Lawrence are included readings.

1025 - LOVE & MARRIAGE: LITERARY PERSPECTIVES 3 credits

This course will explore through novels, short stories, poetry and plays of the nineteenth and twentieth centuries the relationship between men and women in rational, romantic, realistic, ironic and revolutionary modes in the stages of love, courtship and marriage to understand how men and women inform, educate, change and influence one another, both creatively and destructively. How British, American, French, Norwegian and Russian writers convey their meaning through form and technique will be an important consideration. Readings include Sons and Lovers, Madame Bovary, A Doll's House, Jude the Obscure, Who's Afraid of Virginia Woolf and other works.

1050 - EFFICIENT READING RATES 1 credit

1051 - READING COMPREHENSION 1 credit

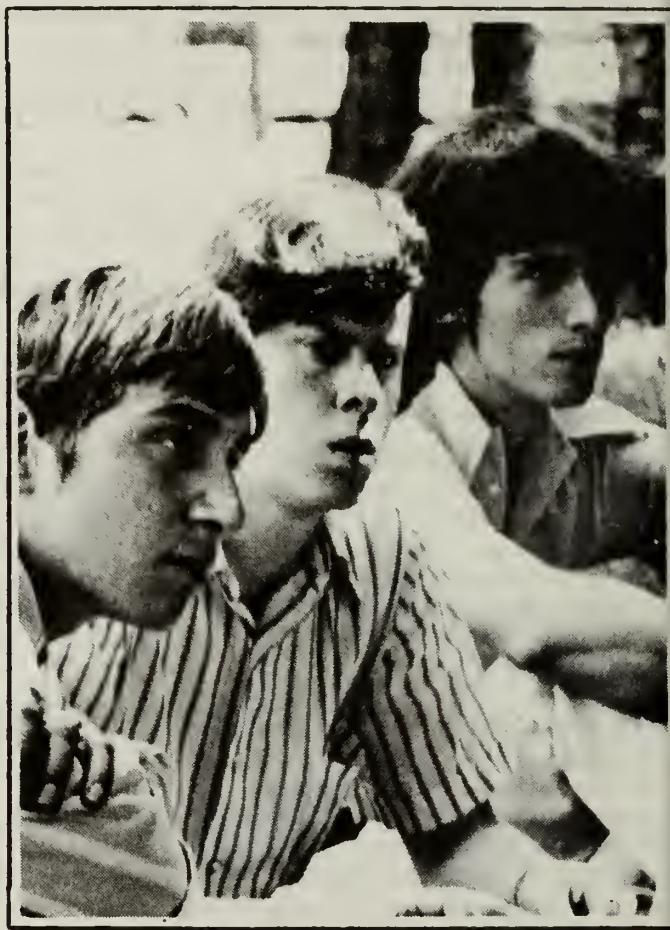
1052 - VOCABULARY DEVELOPMENT 1 credit

These three one-credit modules are designed for the student needing an emphasis in development preparation. After diagnostic testing, the student is placed in a level of instruction appropriate to his/her weaknesses. This course is appropriate for a student with either a marked weakness in reading and verbal skills or for self-improvement in particular areas. These courses can be taken a credit at a time or a student may register for all three modules.

1100 - COMMUNICATION SKILLS 1 3 credits

This course develops study skills necessary for college work and provides a solid review of Basic English skills in grammar

and composition. The work in the course covers textbook studying, outlining, time allotment, punctuation, the parts of speech, sentence structure, and paragraph development. The course provides preparation for English Composition 1 and is suitable for students who have had difficulty with English composition, or who have had few opportunities to exercise their composition skills.



1104 - A SURVEY OF BLACK AMERICAN LITERATURE 1 3 credits

This course is designed to accomplish two aims. First, there will be a concentrated study of the writings by Black Americans from slavery times to 1940, including not only the usual fiction, essays and poetry but also folk tales, orations and slave narratives; secondly, this course will focus upon developing an awareness of the unique quality of the "Black Experience" as it has defined the various modes and themes that characterize Black Literature.

1105 - A SURVEY OF MAJOR AMERICAN & EUROPEAN POETS 3 credits

This course examines representative works of poetry from various literary periods. The major poets of America and Europe are studied and discussed, though modern poetry is given considerable importance. The course gives particular attention to the art of poetry as a literary genre.

1107 - A SURVEY OF MAJOR AMERICAN & EUROPEAN NOVELS 3 credits

This course examines representative novels from various literary periods, giving particular attention to the history and development of the novel as a genre, as well as the novel's ability to capture the quality of a period. Major American and European novels are studied and discussed.

Moreover, the course will continue, on a more immediately relevant level, the development of an appreciation of that particular quality of life known as the "Black Experience."

1139 - ROBERT FROST: THE MAN & HIS WORK 3 cr.
Robert Frost won immense popularity in America, particularly in New England. Students in the course will read and discuss his major poems. The class will consider biographical information for a fuller understanding of Frost's wisdom and wit.

CE1141 - MODERN TRADITION 3 credits
This is a course designed to acquaint the student with the Modernist movement and to read authors who have made significant contributions in the writing of that movement: existentialism, symbolism, myth. Authors to be read include Camus, Sartre, Mann, Borges, Kafka, and as many other modernists as time permits.

1143 - LITERATURE OF THE NAZI HOLOCAUST 3 credits
Through study of novels, journals, plays, poetry and film, the course attempts to confront human response to death camps of World War 2. Units include background on anti-Semitism, roots of Fascism, history of world complicity, dimensions of crime and implications for the modern world. This course is usually taught by an interdepartmental team.

CE before a course number indicates: Continuing Education (offered currently only in the Evening Division).

FOREIGN LANGUAGES

FRENCH

1084 - ELEMENTARY FRENCH 1 3 credits
This introductory course is designed primarily for students who have had no previous experience with the language. Reading comprehension and mastery of the phonic patterns of the language are first objectives. Some basic grammar is introduced. Televised and semi-programmed materials help to accommodate the individual learning pattern and pace. Work with tapes is required. NO PREREQUISITES.

1085 - ELEMENTARY FRENCH 2 3 credits
This is a continuation of Elementary French 1. Using televised materials with an accompanying text, grammar is studied in context and the first objective of the course is the development of oral comprehension and conversational skill in a limited context. Work with tapes is required. PREREQUISITES: Elementary French 1 or two units of French at entrance.

1086 - INTERMEDIATE FRENCH 1 3 credits
The intermediate sequence is designed for students who have had a measure of experience with the language and seek to increase their control of the basic skills. Conversation, comprehension practices, grammar and guided composition, reading on both elementary and advanced levels make up the content of the course in a combination that reflects the background and interests of the group. Work with tapes or television is required. PREREQUISITES: Elementary French 2 or 3 units of French at entrance.

1087 - INTERMEDIATE FRENCH 2 3 credits
This is a continuation of Intermediate French 1. Classes are conducted in French. Small group instruction provides an individualized, intensive learning experience in which the student shares in the selection of course priorities and assumes responsibility for his progress. Work with tapes or television required. Some independent reading, oral reports, etc. PREREQUISITES: Intermediate French 1 or 4 units of French at entrance.

1113 - DIRECTED STUDY IN FRENCH Variable credits
Projects for advanced individual study by special arrangement with the instructor and approval of the Department and Division Chairmen. Students are expected to demonstrate willingness and ability to work on their own with minimal assistance.



GERMAN

1088 - ELEMENTARY GERMAN 1 3 credits
An elementary course for the students who have had no previous experience with the language. Formal grammar, drill in pronunciation, oral and written compositions are required. No credit will be given unless a full year's work is completed. Language lab required.

1089 - ELEMENTARY GERMAN 2 3 credits
A continuation of German 1. Language lab required. PREREQUISITE: Elementary German 1 (1088).

1111 - DIRECTED STUDY IN GERMAN Variable credit
Projects for advanced individual study by special arrangement with the instructor and approval of the Department and Division Chairmen. Students are expected to demonstrate willingness and ability to work on their own with minimal assistance.

SPANISH

1081 - PRACTICAL MEDICAL SPANISH FOR ENGLISH SPEAKERS 1-3 credits
Students whose major is in any one of the Health Divisions will become acquainted with basic medical terminology in the Spanish language. They will become familiar and conversant with questions, terminology and communication problems

common to the medical profession in helping Spanish speaking patients.

1096 - ELEMENTARY SPANISH 1 3 credits

The approach to this course is strictly utilitarian, lessons centering around realistic themes and situations. Only a limited amount of grammar is introduced; the course concentrates on the acquisition of pragmatic vocabulary, verb patterns and idiomatic expressions used in daily situations. Language lab is required.

1097 - ELEMENTARY SPANISH 2 3 credits

A continuation of Elementary Spanish 1. Students are urged to start using basic conversational patterns and developing some reading skills. Language lab is required. PREREQUISITES: 1096 or 2 units at entrance.

1098 - INTERMEDIATE SPANISH 1 3 credits

A review of grammar will be given in this course; oral drill and conversation receive special attention. The reading skills are further developed. Students are introduced to basic writing skills. Language lab is required. PREREQUISITES: 3 units of Spanish at entrance or 1097.

1099 - INTERMEDIATE SPANISH 2 3 credits

A continuation of Intermediate 1. The reading and writing skills receive special attention. A Spanish novel is required reading. Taught in Spanish. Language lab is required. PREREQUISITES: 4 units of Spanish at entrance or 1098.

1112 - DIRECTED STUDY IN SPANISH Variable credits

Projects for advanced individual study by special arrangement with the instructor and approval of the Department and Division Chairmen. Students are expected to demonstrate willingness and ability to work on their own with minimal assistance.



MUSIC

1117 - DIRECTED STUDY IN MUSIC

Variable Credits

Projects for advanced individual study by special arrangement with the instructor and approval of the Department and Division Chairpersons. Students are expected to demonstrate willingness and ability to work on their own with minimal assistance.

8080 - MUSIC APPRECIATION 3 credits

A survey course for the general student in which significant works from the several periods of music history will be heard and discussed. This course will be open to all students at the college. Outside listening and reading assignments will be scheduled and attendance at live concerts will be encouraged.

8084 - INTRODUCTION TO MUSIC THEORY & HARMONY 3 credits

A first theory course for the student with some formal musical experience. Creative work in the forms of the common practice period will constitute the major thrust of the semester's work. Keyboard orientation, melodic and harmonic dictation and score analysis will form the remainder of the course activities. The course is open to all students at the college with the approval of the instructor.

8085 - HARMONY AND COMPOSITION 3 credits

A continuation of Introduction to Music Theory and Harmony, encouraging greater creativity in the use of theoretical and harmonic materials. The student is encouraged to experiment with formal designs of larger scope and original design. The techniques of orchestration and arranging will be discussed and practical exercises completed for performance by student and guest instrumentalists and singers. The completion of 8084 or its challenge exam is a prerequisite for registration in this course.

8087,8088,8089,8090 - CHORALE 1 credit per course

A mixed choral ensemble of up to sixty voices. Membership open to all students in the college. Selected works of the significant periods of music history will be studied, rehearsed and performed in on-campus and off-campus concerts. Special musical accomplishment is not a prerequisite for membership.

8092 - ELEMENTS OF MUSIC 3 credits

An introductory theory course for students without previous musical experience. The basic structure of music will be studied through a dissection of the elements; melody, harmony, rhythm, timbre form, etc. Practical work in music notation, music reading, keyboard experience, listening and simple composition is designed to give the student foundation for more advanced experience in performing and composing. The course is open to all students at the college regardless of previous musical experience.

8093 - STCC CONSORT 1 credit

A selected mixed choral ensemble of twelve to sixteen voices, auditioned from the STCC Choral membership. Selected literature for small ensemble will be studied, rehearsed and performed. Emphasis on the quality of literature and performance. (Parallel Membership in the STCC Chorale required).

8094 - INTRODUCTION TO KEYBOARD SKILLS 3 credits

An adult approach for beginning piano students. The course will be taught as a laboratory skills program with emphasis on



the basic structure of keyboard music. Melody, chords, rhythm, form, dynamics and style will be studied by the student at the keyboard and discussed in lecture sessions. Students will be encouraged to proceed as their individual abilities permit, requiring considerable individualization of instruction as the student gains in technical mastery. Open to all students at the college regardless of previous musical experience.

8095 - MUSIC FOR EARLY CHILDHOOD EDUCATION

3 credits

An introductory course in the tenets of music, keyboard experience and practical musical activities suitable for use in nursery, kindergarten and primary programs. Also included will be workshop experiences in rhythmic movement, singing, dramatization and rhythm instruments.

8103 - INTERMEDIATE KEYBOARD SKILLS

2 credits

A continuation of the Introduction to Keyboard Skills course. Mastery of major and minor scales, arpeggios, and chords in all keys will be taught. The emphasis will be on developing mastery of sight-reading skill, providing the student with skills for further self-exploration of the keyboard upon completion of the program. Course open with the permission of the instructor or the satisfactory completion of 8094.

PHILOSOPHY

1045 - INTRODUCTION TO PHILOSOPHY

3 credits

An introductory course in philosophy designed both to acquaint the student with the various areas of philosophical inquiry and to bring to light the philosophical dimensions of contemporary life. Some of these areas and dimensions are critical thinking, the individual's relation to society, the meaning of work and leisure, and death.

PHOTOGRAPHY

1120 - DIRECTED STUDY IN PHOTOGRAPHY

Variable credit

Projects for advanced individual study by special arrangement with the instructor and approval of the Department and Division Chairmen. Students are expected to demonstrate willingness and ability to work on their own with minimal assistance.

6174 - PHOTOGRAPHY

3 credits

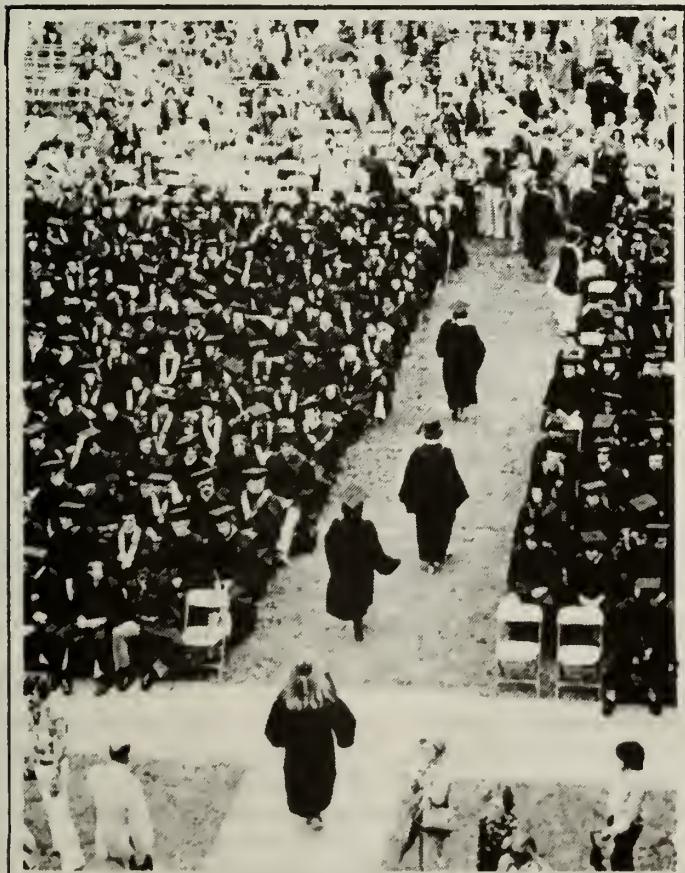
Technical and aesthetic aspects of camera operation, exposure negative development, printing and enlarging. Emphasis is placed on sound craftsmanship, personal selection, arrangement, and discovery of forms necessary to sensitive photographic expressions. Motion picture equipment will also be a part of this course. The student will learn the basic principles involved in television photography.

6211 - PHOTOGRAPHY 2

3 credits

This course is a continuation of Photography 1 with more emphasis being placed on the aesthetic aspects of photography, including subject selection, composition, lighting control, material selection, print finishing and mounting. Students will also be able to work in any of the specialized fields of photography that they desire, such as portraiture, still life, photo journalism, etc.

Social sciences



SOCIAL SCIENCES

Minimum Grade Requirement: Liberal Arts Transfer students must achieve a cumulative average of "C" (2.0). The Division of Social Sciences minimum grade policy is that students will pass an individual course with a grade of "D—" or better. They should, however, check with their own major to determine the cumulative minimum grade requirement for graduation or certification.

ECONOMICS

4014 - PRINCIPLES OF ECONOMICS 1 3 credits

The course is offered primarily for those students who might not take more than one or two semesters of economics but are interested in the subject as a part of a general education. It aims at the understanding of current economic institutions and the economic problems of modern industrialized society such as inflation, unemployment, urban development, and economic growth. No previous knowledge of economics is required.

4015 - PRINCIPLES OF ECONOMICS 2 3 credits

This course is the sequential course to Principles of Economics 1 (4014) and is primarily concerned with Microeconomics. Microeconomics deals with the subsystems of the economy such as the economics of the individual, the firm and an industry. The major emphasis is on a thorough analysis of supply and demand and of the four-market structures. The theories and concepts are then applied to such relevant topics as poverty, ecology, and population growth.
PREREQUISITES: 4014.

4016 - CURRENT ECONOMIC PROBLEMS 3 credits

A course designed to acquaint the student with a greater understanding of several of the more important problems of our economy such as economic growth, unemployment, consumer credit, cost of air pollution and population explosion. The main aspect of the course will be practical economic analyses of the problems covered.

4017 - COMPARATIVE ECONOMIC SYSTEMS 3 credits

This course considers an analysis of today's major economic systems, such as the American modified market economy, the mixed economies of Western Europe, France, Germany, United Kingdom and the command economies of the Soviet Union and the Peoples Republic of China. PREREQUISITE: 4014.

4500 - DIRECTED STUDY IN ECONOMICS Variable credits

Semester hour credit will vary from one to three, depending upon the written, agreed-upon, approved, student-professor contract.

HISTORY

4012 - HISTORY OF WESTERN CIVILIZATION 1 3 credits

Origin and development of Western Civilization beginning with the classical civilizations of Greece and Rome, continuing through early Christianity and the Middle Ages, and concluding with the Renaissance and Reformation.

4013 - HISTORY OF WESTERN CIVILIZATION 2 3 credits

Modern Western Civilization from the end of the Middle Ages to the present. Begins with Seventeenth Century Europe and discusses: the beginnings of modern science; the Enlightenment and the political revolutions in England, America and France; the industrial and intellectual revolutions of the Nineteenth Century; the World Wars of the Twentieth and developments which follow in the post-war period.



4027 - CIVILIZACION HISPANICA 1 3 créditos

Latin-American history from discovery of the New World to the Wars of Independence.

Este curso cubre la Historia de Latinoamérica comenzando con el descubrimiento del Nuevo Mundo hasta las guerras de Independencia (1492 - 1825). Este curso tratará de analizar el sistema colonial Español, su cultura, el efecto de éste sobre la población indígena, el declino de España como poder mundial y la subsecuente pérdida del control sobre sus colonias que luego resultó en las Guerras de Independencia.

4028 - CIVILIZACION HISPANICA 2 3 créditos

Latin-American history from 1825 to the present.

Este curso cubre el período de la historia de Latinoamérica desde 1825 hasta el presente. Un análisis estructural de la evolución de una cultura única, creada de la mezcla de tres razas - India, Europea y Africana - serán presentados empleando materiales audio-visuales en adición a conferencias y discusiones. Se le dará atención especial a tópicos del Siglo XX como la Revolución Mexicana de 1810, Cuba Socialista y el Autoritarismo en Brasil.

4076 - MODERN U.S. DIPLOMATIC HISTORY 3 credits

An historical survey of significant currents in American Diplomacy from the 1890's to the present. Consideration will be given to the antecedents of Twentieth Century American Foreign Policy and to the interplay of Ideology and the National Interest in the decision-making process.

4078 - INTRODUCTION TO MODERN BRITAIN AND FRANCE 3 credits

A survey of Britain and France in the Nineteenth and Twentieth Centuries. Social, economic and political developments are treated with emphasis upon their respective roles in Nineteenth Century world affairs, their decline in the Twentieth Century and their influence upon American development and history. (Spring Semester offering).

4079 - HISTORY OF THE RUSSIAN EMPIRE 3 credits
An introductory study of the political, social and intellectual history of the Russian Empire from the Rurik Dynasty, the November Revolt of 1917 and the Russian Civil War.

4080 - HISTORY OF SOVIET RUSSIA 3 credits
An introductory study of the political, social and intellectual development of Soviet Russia with emphasis on the origins of Russian Marxism and the Bolshevik movement. The course also deals with the internal development of Russia, her international relations and current politics. (Spring Semester Offering).

4081 - HISTORY OF THE U.S. BEFORE 1865 3 credits
History of the United States from the Colonial period to the end of the Civil War. A topical approach is followed within a chronological framework centering on the colonial origins of American society, its separation from England, the subsequent process of nation building and the development of the Civil War during the Ante-Bellum period.

4082 - HISTORY OF THE U.S. SINCE 1865 3 credits
History of the United States from the Reconstruction period until the present. Consideration will be given to the impact of the Industrial Revolution on late Nineteenth Century America and the influence of war and reform on the nation during the Twentieth Century. A social-cultural and new political approach will be utilized.

4097 - INTRODUCTION TO AFRICA, ASIA & LATIN AMERICA 3 credits
A survey of the principal similarities and differences among Asian, African and Latin American countries with emphasis on their social, cultural and historical characteristics.

CE 4110 - LOCAL HISTORY OF THE AMERICAN REVOLUTION 3 credits
The course will endeavor to create the atmosphere of the Pioneer Valley during this exciting period in our history. Special attention will be given to the area's actual involvement in the war itself; with a comprehensive evaluation of local political and military participation. The social and political changes which occur in the Valley will be stressed. And finally the climatic events of Shay's Rebellion will be discussed and evaluated.

CE 4111 - HISTORY OF THE PIONEER VALLEY 3 cr.
A detailed explanation of the climate, geography and the nature of the land in the Pioneer Valley. A review of the exploration and reasons for the settlement of the Connecticut River Valley, History of Springfield, and the establishment of the Armory is also included.

CE 4116 - THE INFORMATION WAR IN VIETNAM 3 cr.
The course will examine the effects of ideology on foreign policy and the efforts of the U.S. government to influence public opinion. The primary focus will be on the American news media in Saigon and how it functioned as the war evolved from 1956 to 1974. By studying the interaction

between newsmen and government officials in Vietnam, the course provides insight to current news events. Vietnam veterans and journalism students urged to enroll.

CE4121 - INTRODUCTORY GEOGRAPHY 3 credits
A geographic analysis of the location, spatial distribution and association of physical and cultural features of the Earth. Objectives of this course include emphasis upon understanding geographic principles, methods and materials. Extensive use of maps.

4504 - DIRECTED STUDY IN HISTORY Variable credits
Semester hour credit will vary from one to three, depending upon the written, agreed-upon, approved, student-professor contract.

CE before a course number indicates: Continuing Education (offered currently only in the Evening Division).

SOCIOLOGY/ANTHROPOLOGY

4006 - INTRODUCTION TO ANTHROPOLOGY 3 credits
A general introduction to social and cultural anthropology which will explore among the diverse cultures of the world some of the possible variations in technology, economics, social and political organization, art, religion and ideology.

4008 - INTRODUCTION TO SOCIOLOGY 1 3 credits
An introduction course designed to acquaint the student with a working knowledge of the concepts used by sociologists and with the well-established generalizations in the field. Topics to be studied include socialization, culture, population, group processes, and social stratification and mobility.

4009 - SOCIAL PROBLEMS 3 credits
This course applies the principles and concepts of sociology to selected aspects of contemporary American society, such as the areas of poverty, crime, urban change, population, alcoholism, role redefinitions, minority group relations and drug addiction. PREREQUISITE: 4008.

4010 - SOCIOLOGY OF THE FAMILY 3 credits
The course will focus on the historical development and change of the family, its structure and functions and its relationship to the other major institutions of society. Although the primary focal point will be the American family, cross-culture comparison will be used especially in the study of marriage and kinship practices. Strong emphasis will also be placed on family change and the family as a social problem including such topics as the single parent, changing sex roles and communes. PREREQUISITE: 4008.

4099 - RACE AND ETHNIC RELATIONS 3 credits
This course will inquire into the causes and consequences of discrimination and prejudice, together with consideration of the manner in which these crucial questions can most adequately be resolved. Social, economic and political aspects of racial problems in the United States will be studied, with particular reference to black and major ethnic groups such as the Black Power movement and Americans of Oriental, Mexican, Indian and Puerto Rican descent. A survey of most earlier immigrant groups will also be made. PREREQUISITE: 4008.

4503 - DIRECTED STUDY IN SOCIOLOGY Variable cr. Semester hour credit will vary from one to three, depending upon the written, agreed-upon, approved, student-professor contract.

4505 - DIRECTED STUDY IN ANTHROPOLOGY Variable cr. Semester hour credit will vary from one to three, depending upon the written, agreed-upon, approved, student-professor contract.

CE before a course number indicates: Continuing Education (offered currently only in the Evening Division).

PSYCHOLOGY AND EDUCATION

4073 - HUMAN RELATIONS AT WORK 3 credits A very basic, introductory course for students in technologies designed to give the student a realistic view of the inter-action of people. Major topics deal with self-identity values and needs. It also deals with the social, psychological and economic aspects of human relations which will enable the student to participate as an individual in the world of works.

4085 - CHILD AND DEVELOPMENTAL PSYCHOLOGY 3 credits

This advanced course examines the major influences on a child's physical, mental, and personality development from conception to adolescence. Students have an opportunity to explore the questions, "what made you the kind of child you were and the kind of adult you are now? Basic theories and contemporary research suggest some answers for more effective parenting.

4086 - GENERAL PSYCHOLOGY 3 credits

This introductory course identifies those scientific methods used to study human behavior. Discussion centers around the contributions of heredity, environment, learning, perception, motivation and emotion in shaping our individual personalities.

4087 - PRINCIPLES OF NORMAL/ABNORMAL BEHAVIOR 3 cr.

A general introduction into the origin, development, degrees of mental disorganization, and the methods of coping with psychological dysfunction. Inquiry will also be made into the theoretical and applied approaches of several of the major schools of thought with regard to helping services. PREREQUISITE: 4086.

CE4088 - ADOLESCENT PSYCHOLOGY 3 credits

A study of the growth and problems of adjustment for adolescents, including the struggle to retain their identity and attain maturity. PREREQUISITES: 4073, 4086.

4092 - PSYCHOLOGY OF HUMAN ADJUSTMENT & PERSONAL EFFECTIVENESS 3 credits

An introductory course which explores the means by which a person manages himself and learns to cope with some of the multiple drives, demands and pressures encountered in human living. The contributions of major theorists such as Erikson, Freud, Fromm, Rogers and Sullivan will be considered. Lectures, textbooks, collateral reading, verbal and written reports will be required. PREREQUISITE: 4073, 4086.

4093 - INTRODUCTION TO INDUSTRIAL & ORGANIZATIONAL PSYCHOLOGY 3 credits

The application of basic psychological principles to human problems in industry. Major areas of emphasis will include worker motivation, individual differences, personnel problems, selection and training, job satisfaction, employee attitudes and incentives, industrial mental health, human relations factors and psychological tests used in industry. PREREQUISITE: 4073, 4086.

CE4102 - PSYCHOLOGY OF DRUG ABUSE 3 credits

This is an introductory course to provide students with a thorough knowledge of drugs and to promote an accurate understanding of the impact it has on society.

CE4103 - PSYCHOLOGY OF THE EXCEPTIONAL CHILD 3 credits

An introductory course emphasizing the etiology, diagnosis, characteristics, education, and prognosis of children with deviations in mental, physical, and/or social-emotional development. PREREQUISITE: 4086.

CE4125 - PROBLEMS OF ALCOHOLISM AND RELATED DEPENDENCIES 3 credits

This course is designed for, but not restricted to, those currently involved with the counseling of persons who have become addicted to alcohol or related mind-altering chemicals. The course will seek to dispel myths and misconceptions about alcoholism, and will exam the impact upon the individual and his family, employment, and community.

4128 - CAREER PLANNING & DEVELOPMENT 3 credits

For students in Student Development, General Students, or the technologies. Systematic career development skills with an emphasis on personal awareness, career exploration, value clarification, decision-making, job market survey, and program development.

In addition to the above topics, the student will be tested using the following battery to provide more in-depth information on each individual: Strong-Campbell Interest Inventory, Self-Directed Search, General Aptitude Test Battery. (Spring Semester Offering).

4501 - DIRECTED STUDY IN PSYCHOLOGY Variable cr.

Semester hour credit will vary from one to three, depending upon the written, agreed-upon, approved, student-professor contract.

CE before a course number indicates: Continuing Education (offered currently only in the Evening Division).

POLITICAL SCIENCE/GOVERNMENT

4083 - AMERICAN GOVERNMENT AND POLITICS 3 credits
An analysis of the way in which politics and political institutions work in American Society. The major problems of American democracy to be examined; their political, social, and economic implications explored; Constitutional Rights and Freedoms; the Federal Power Structure; Changing Governmental Institutions.

4084 - EUROPEAN COMPARATIVE GOVERNMENT 3 credits
A functional analysis of the government and politics of four European political systems: Great Britain, France, West Germany, the Soviet Union. The historical development of political institutions will be traced and compared, while changing social, economic, and cultural conditions are emphasized.

CE4107 - INTRODUCTION TO POLITICAL SCIENCE 3 credits
An introductory course to provide students with a general understanding of the basic phenomena of political systems and governmental policy formation, organization and general administration.

4112 - INTERNATIONAL RELATIONS-WORLD POLITICS 3 credits
This course is designed to aid the student in reaching a better understanding of the world politics which determines whether we as individuals and our civilization will prosper, decline or possibly be incinerated. The nation-state system, nations/interest conflict or cooperation, and the search for international order will be discussed. An emphasis will be given to American foreign policy and our role in world affairs with special consideration given to highly volatile current international problems.

4117 - GOVERNMENT AND POLITICS OF AFRICA 3 credits
The role of politics in the developing nations of Sub-Saharan Africa, with special emphasis on problems of colonialism, modernization, and new forms of nationalism. Sources of stability and revolutionary pressures will be viewed as current events.

CE4119 - FUTURE POLITICS 3 credits
This is a new course in a new setting. It is divided into two parts: problems and possible resolutions. First, recently many of us have begun to read (and experience) more and more about increasing population, pollution and the growing scarcity of food and natural resources. What is at work here? This course will explore these problems. Secondly, since the government will grapple with these problems; as it has with the energy and food shortages, the concluding part of this course will examine the possible approaches which government can take to resolve these difficulties. Thinking about the next twenty-five years, our standard of living, style of life, form of government, international peace and the future of mankind itself could be heavily influenced by these factors.

4502 - DIRECTED STUDY IN POLITICAL SCIENCE

Variable cr.
Semester hour credit will vary from one to three, depending upon the written agreed-upon, approved, student-professor contracts.

5080 - MUNICIPAL GOVERNMENT 3 credits
A survey of the governmental structure and function of American municipalities.

5081 - PUBLIC RELATIONS 3 credits
Public relations is conceived as an interacting process involving both program performance and communication. The more sophisticated aspects of public relations are covered, including analysis and research, composition of the public, community group relationships and historical and political perspectives. Covers citizen services, employee citizen relations, police and public relations, mass media, government reports and events, publication planning and printing, organization for public relations and employee relations and training.

5082 - MUNICIPAL & STATE FINANCE & BUDGET ADMINISTRATION 3 credits
A study of the systems of finance and the achievement of program objectives in public administration. Emphasis is placed upon aspects of the budgetary requirements, the role of the legislature, the role of the financial officer, the role of the administrator, assessing and municipal finance, public purchasing and contracts, personnel aspects, school finances, impact of aid programs, and long range fiscal planning.

5083 - LABOR MANAGEMENT RELATIONS 3 credits
The history of the American labor movement, union security, seniority negotiations and arbitration, collective bargaining agreements, right to work laws, strikes, management prerogatives and labor management cooperation plans, congressional and other judicial laws concerning labor and judicial decisions interpreting these.

5084 - MUNICIPAL AND REGIONAL PLANNING 3 credits
The history and contemporary practices in municipal planning and the development of the methodology and techniques for analysis of today's planning. Review and discussion of the problem of identifying, selecting, and reconciling appropriate goals of regional area development. Course includes the legal basis for zoning and for planning in Massachusetts and focuses on the relationship of land use to social and economic patterns.

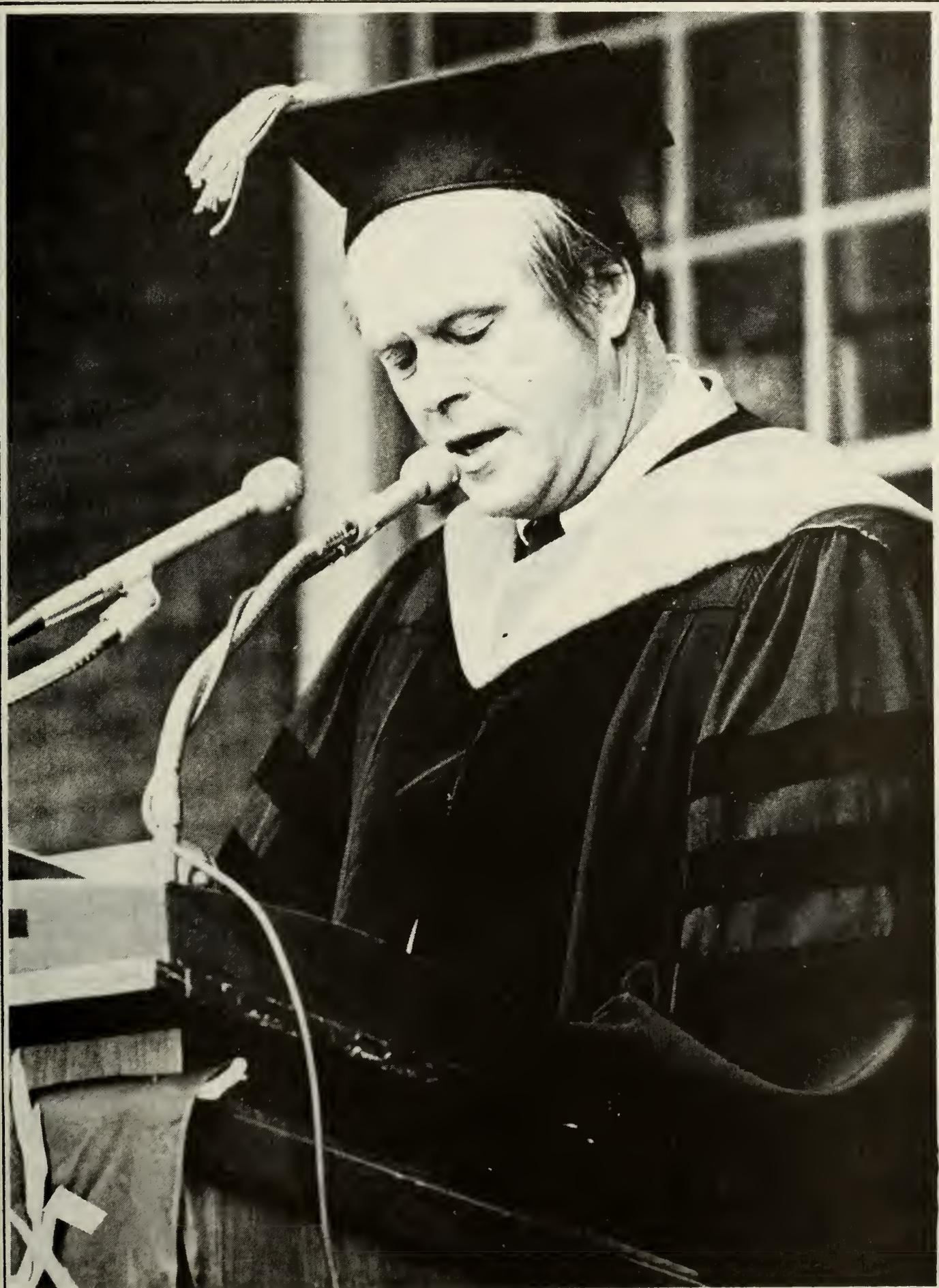
5085 - QUANTITATIVE ANALYSIS FOR PUBLIC ADMINISTRATORS 3 credits
Introduction to basic research and statistical techniques as applied to special problems in the field of public administration.

CE before a course number indicates: Continuing Education (offered currently only in the Evening Division).

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MASSACHUSETTS REGIONAL COMMUNITY COLLEGES

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Information as of June 1977



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Extension 3839

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Extension 3819

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Building 16, Second Floor West
Extensions: 3856, 3851, 3857, 3824, 3848

COMPUTER CENTER

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Extension 3833

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Building 16, Second Floor
Extension 3825

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| Business Administration | Donald F. Bready Building 17, Room 217 Extension 3324 | Art | Edith M. Bugbee Building 28, Room 200 Extension 3753 |
| Humanities | Jewel Rentzschke Building 13, Room 101 Extension 3655 | Automotive Technology | Richard D. Cormier Building 25, Room 200 Extension 3757 |
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| | | Dental Hygiene | Denise Ryan Building 20, Room 240 Extension 3528 |
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| | | Economics | Siegfried F. Rentzschke Building 20, Room 518 Extension 3527 |
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| Environmental Sciences Technology | William C. Gaitenby Building 13, Room 113 Extension 3657 | Physics | Hilton M. Abbott Building 17, Room 314 Extension 3384 |
| Fire Protection and Safety Technology | Albert W. Valentine Building 17, Room 219 Extension 3327 | Psychology | M. Frances Juliano Building 20, Room 508 Extension 3519 |
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| Landscape Technology | H. Alan Crowe Building 27, Room 109A Extension 3478 | Telecommunications Technology | Nathan L. Rutstein Building 13, Room 323 Extension 3653 |
| Law Enforcement | Bert G. Scannapieco Building 17, Room 225 Extension 3325 | Directory Information as of Aug. 31, 1977 | |
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| Mathematics | Robert Yawin Building 17, Room 303 Extension 3331 | | |
| Medical Assisting | Mary Ellen Harbeck Building 20, Room 332 Extension 3517 | | |
| Medical Laboratory Technicians | Mary C. Griffin, S.P. Building 20, Room 350 Extension 3516 | | |
| Mental Health Technicians | Mary T. Killeen Building 20, Room 352 Extension 3520 | | |

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| Harlan Douglas B.S., Johnson State College M.A., New Mexico State University | <i>Dean of Continuing Education</i> | | |

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|--|--------------------------------------|---|---|
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| R.D.H., Forsyth School of Dental Hygiene | | M.S., University of Massachusetts | |
| A.S., Northeastern University | | | |
| B.S., University of North Carolina | | | |
| John J. Fortsch | <i>Data Processing Technology</i> | Michael Hanna | <i>Director of Computer Center</i> |
| B.S., Fitchburg State College | | A.B., Harvard University | |
| M.S., Springfield College | | Cert. IBM Computer Techniques | |
| | | Cert. IBM Systems Analysis | |
| Leon Friedman | <i>Economics</i> | *Mary Ellen Harbeck | <i>Medical Assistant</i> |
| B.A., University of Hawaii | | R.N., Nazareth College | |
| M.A., George Washington University | | B.S.N., Nazareth College | |
| Frank Furgal | <i>Manufacturing Processes</i> | M.Ed., American International College | |
| B.S., Westfield State College | | | |
| C.M.E., Society of Manufacturing Engineers | | | |
| *William Gaitenby | <i>Environmental Technology</i> | Robert Harriman | <i>Mathematics</i> |
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| | | M.Ed., American International College | |
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| M.A.T., University of Massachusetts | | B.S., American International College | |
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| B.S., California Institute of Technology | | | |
| Ph.D., University of Pittsburgh | | | |
| Louis Gentile | <i>Psychology</i> | Ross Higgins | <i>Bio-Medical Instrumentation Technology</i> |
| B.S., American International College | | A.S., Springfield Technical Community College | |
| M.S., Springfield College | | | |
| Ph.D., University of Maryland | | | |
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| M.B.A., Western New England College | | M.A., University of So. California | |
| | | Ph.D., University of So. California | |
| *John Godfrey | <i>Business Administration</i> | *Lucille Hood | <i>Physical Therapist Assistant</i> |
| B.S., American International College | | B.S., Boston University, R.P.T. | |
| M.B.A., Western New England College | | M.A., Stanford University | |
| Francis Gray | <i>English</i> | Jeffrey Howe | <i>Respiratory Therapist</i> |
| A.A., Holyoke Community College | | A.S., Holyoke Community College | |
| B.A., North Adams State College | | A.S., Springfield Technical Community College | |
| M.Ed., Out Lady of the Elms College | | | |
| Marie Greco | <i>English</i> | Bruce Howes | <i>Sociology</i> |
| B.A., Queens College | | B.S., Springfield College | |
| M.S., Queens College | | M.Ed., Westfield State College | |
| Thomas Greene | <i>Counselor, Financial Aid</i> | Juan Jimenez | <i>Math & Biological Sciences</i> |
| B.A., American International College | | B.S., Univ. of Massachusetts | |
| Mitchell Gregorski | <i>Accounting</i> | Raymond Johnson Jr. | <i>Staff Assistant</i> |
| B.B.A., American International College | | A.S., Springfield Technical Community College | |
| M.B.A., American International College | | | |
| *Sr. Mary Cecilius Griffin | <i>Medical Laboratory Technician</i> | Rena Johnson | <i>Nursing</i> |
| B.S., St. Joseph College | | B.S., University of Massachusetts | |
| M.T., (A.S.C.P.) | | | |
| Walter Gunning | <i>Mathematics</i> | *M. Frances Juliano | <i>Psychology</i> |
| B.S., Boston College | | B.A., Emmanuel College | |
| M.Ed., Westfield State College | | M.N., Yale University School of Nursing | |
| | | M. Ed., Springfield College | |
| | | | |
| | | Arvind Karnik | <i>Electronics</i> |
| | | B.S.E.E., University of Bombay | |
| | | M.S.E.E., Rutgers, State Univ. of New Jersey | |
| | | | |
| | | Richard Kasunick | <i>Coordinator of Video/Human Services</i> |
| | | B.A., Worcester State College | |

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|--|---|---|---|
| Virginia Kerr | <i>Psychology; Coordinator, Liberal Arts Transfer Program</i> | Raymond Lindsay | <i>Heating/Power/Air Conditioning Tech.</i> |
| B.A., University of Maryland | | B.S., Westfield State College | |
| M.Ed., University of Vermont | | | |
| *Mary Killeen | <i>Mental Health Technician</i> | Kenneth Lukis | <i>Chemistry</i> |
| R.N., Springfield Hospital School of Nursing | | B.A., Saint Anselm's College | |
| B.A., Our Lady of the Elms College | | M.S., Holy Cross College | |
| M.S., Springfield College | | Ph.D., University of Pittsburgh | |
| Sandra King | <i>Respiratory Therapist</i> | Nancy McAuliffe | <i>Cataloguer</i> |
| Cert., Springfield Technical Institute | | B.A., College of St. Catherine | |
| A.A., Springfield Technical Community College | | A.M.L.S., University of Michigan | |
| Theodore King | <i>Medical Director, Respiratory Therapy</i> | Edward R. Maclosky | <i>Director of Personnel</i> |
| B.S., Capital University | | B.A., University of Connecticut | |
| M.D., Cincinnati College | | M.S., University of Connecticut | |
| Edwina Kirby | <i>Secretarial Sciences</i> | Irving Magoon | <i>Mathematics</i> |
| A.S., Becker Jr. College | | B.S., Mississippi State College | |
| B.S., American International College | | | |
| M.Ed., University of Massachusetts | | | |
| Edward Klein | <i>Dental Assistant</i> | William Manzi | <i>Acting Dean of Students</i> |
| B.S., American International College | | B.A., American International College | |
| D.D.S., New York University College of Dentistry | | M.A., Westfield State College | |
| Richard Kretschmar | <i>Staff Assistant</i> | Mary Marrion | <i>English</i> |
| Kenneth Krug | <i>Staff Assistant</i> | B.A., College of Our Lady of the Elms | |
| A.S., Springfield Technical Community College | | M.A., Southern Illinois University | |
| *Rita LaBrecque | <i>Operating Room Technician</i> | Peter Martinello | <i>Automotive Technology</i> |
| R.N., Mercy Hospital School of Nursing | | A.S., Springfield Technical Community College | |
| B.S.N., Boston College | | B.S., University of Massachusetts | |
| M.Ed., Westfield State College | | | |
| Stephen Lak | <i>Machine & Tool Design</i> | Walter Mayfield | <i>English</i> |
| B.S.M.E., Western New England College | | B.S., University of Alabama | |
| M.S.M.E., Worcester Polytechnic Institute | | M.A., Rensselaer Polytechnic Institute | |
| James Langone | <i>Graphic Arts</i> | Beverly McCarthy | <i>Secretarial Sciences</i> |
| B.S., Rochester Institute of Technology | | A.S., Berkshire Community College | |
| M.S., Rochester Institute of Technology | | B.S., Salem State College | |
| Sister Mary Elizabeth Leahy | <i>Nursing</i> | M.A.T., American International College | |
| R.N., St. Vincent Hospital School of Nursing | | | |
| B.S.N., Boston College School of Nursing | | | |
| M. Nsg., Boston College School of Nursing | | | |
| Anne Lemieux | <i>Music</i> | *Carol McCarthy | <i>Dental Assistant</i> |
| B.M., Immaculate College | | A.S., Springfield Technical Community College | |
| M.Ed., Bridgewater State College | | B.S., University of Massachusetts | |
| Raymond Lemieux | <i>Economics</i> | Margaret McCarthy | <i>Physics</i> |
| B.S., Bridgewater State College | | A.B., Wheaton College | |
| M.Ed., Bridgewater State College | | M.S., University of Pittsburgh | |
| M.A., University of Illinois | | | |
| George Leslie | <i>Biology</i> | Ruth McClain | <i>Director of Testing; Counselor</i> |
| B.A., Holy Cross College | | B.A., Glassboro State College | |
| M.S., University of Detroit | | M.Ed., Boston University | |
| Delores Lewis | <i>Director of Financial Aid</i> | James McDonald | <i>Mathematics</i> |
| B.S., Texas Woman's University | | B.S., University of Massachusetts | |
| | | M.A., American International College | |
| | | Clare McDonnell | <i>English</i> |
| | | B.A., Our Lady of the Elms | |
| | | M.A., University of Wisconsin | |
| | | Thomas McFarlin | <i>Mathematics</i> |
| | | B.S., University of Pennsylvania | |
| | | M.B.A., Western New England College | |

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| *Robert McGuiness | <i>Heating/Power/Air Conditioning Tech.</i> | | <i>Nursing</i> |
| A.A.S., Holyoke Community College | | Eileen Neville | |
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| M.Ed., Westfield State College | | B.S., University of Massachusetts | |
| | | M.S., University of Massachusetts | |
| James Meehan | <i>Biology</i> | | <i>Biology</i> |
| B.S., University of Massachusetts | | | |
| M.A.T., University of Massachusetts | | | |
| *Alan Merickel | <i>Developmental English</i> | | <i>Chemistry</i> |
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| M.A.T., University of Massachusetts | | B.A., American International College | |
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| B.A., Brooklyn College | | | |
| M.A., University of Rochester | | | |
| Joan Millett | <i>Nursing</i> | | <i>Secretarial Sciences</i> |
| R.N., St. Joseph College | | Marjorie O'Donnell | |
| B.S., St. Joseph College | | B.S.B.A., American International College | |
| M.A., Columbia University | | M.A.T., American International College | |
| Judith Mish | <i>English</i> | | |
| B.A., University of Minnesota | | Mary O'Leary | <i>Chairwoman, Division of Nursing</i> |
| B.S., University of Oslo | | R.N., Providence Hospital School of Nursing | |
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| Peter Montessi | <i>Machine & Tool Design</i> | M.S., Boston College | |
| B.S., Westfield State College | | J.D., Western New England College | |
| Mary Moran | <i>Nursing</i> | | |
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| B.S., Our Lady of the Elms College | | A.D.N., Northeastern University | |
| M.Ed., Our Lady of the Elms College | | B.S.N., University of Massachusetts | |
| J.D., Western New England College | | M.S., Springfield College | |
| Edward Moriarty | <i>Sociology</i> | | <i>Law Enforcement</i> |
| B.A., St. Anselm's College | | Alfred Ottani | |
| M.Ed., Our Lady of the Elms College | | B.A., American International College | |
| Patricia Moriarty | <i>Nursing</i> | | |
| B.S.N., Boston College | | *Otto Paradzick Jr. | <i>Advanced Metal Machining Technology</i> |
| | | B.S.M.E., Western New England College | |
| | | M.B.A., Western New England College | |
| *Gary Mullett | <i>Electronic Technology</i> | | |
| B.S.E.E., University of Massachusetts | | Robert Parenteau Sr. | <i>Mathematics</i> |
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| William Mullett | <i>Mathematics & Physics</i> | M.Ed., University of Massachusetts | |
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| M.Ed., University of Massachusetts | | | |
| Mary Murphy | <i>English</i> | | <i>History</i> |
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| M.A., American International College | | B.A., American International College | |
| Richard Murphy | <i>Physics</i> | M.A., Bowling Green State University | |
| B.A., American International College | | | |
| M.S., University of Massachusetts | | | |
| Carl Murray | <i>Heating/Power/Air Conditioning Tech.</i> | | <i>Sociology</i> |
| Licensed Engineer (First Class) | | Lucille Parks | |
| B.S., Westfield State College | | B.S., Springfield College | |
| | | M.Ed., Springfield College | |
| | | | |
| | | C. Wright Pearson | <i>Jr. Programmer/Systems</i> |
| | | B.A., American International College | |
| | | | |
| | | Gail Pederzoli | <i>English</i> |
| | | B.A., Elmira College | |
| | | M.A., University of Wisconsin | |
| | | | |
| | | Kathleen Pellegrino | <i>Business Administration</i> |
| | | B.S., Boston University | |
| | | M.B.A., Western New England College | |
| | | | |
| | | Ronald Peters | <i>Psychology</i> |
| | | B.A., Southern University | |
| | | M.Div., Gordon Cornwell Theological Seminary | |

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| Robert Peterson B.A., Rensselaer Polytechnic Institute | <i>Civil Engineering Tech.</i> | B.A., University of Minnesota M.A., University of Minnesota |
| *Mary Jane Pi-Sunyer B.A., Radcliffe College M.A., Radcliffe College M.A., University of Massachusetts Ph.D., University of Massachusetts | <i>Sociology</i> | Carol Roberts <i>Chairwoman, Division of Social Sciences</i> B.A., Tufts University M.Ed., University of Massachusetts |
| *George Ponte A.S., Springfield Technical Community College | <i>Respiratory Therapist</i> | Lee Robinson <i>Respiratory Therapist</i> A.S., Triton Junior College |
| Dorothy Pryor B.A., Fisk University M.A., University of Chicago | <i>English; Affirmative Action Officer</i> | Robert Rodgers <i>Business Administration</i> B.A., University of Massachusetts J.D., Northeastern University School of Law |
| Joan Purcell Cert., American Hair Design Institute Licensed Cosmetology Instructor | <i>Cosmetology</i> | *Joseph Ross <i>English</i> B.A., Emerson College M.Ed., Westfield State College |
| Richard Pushkin Cert., Springfield Technical Community College | <i>Radiologic Technology</i> | *Nathan Rutstein <i>Telecommunications Technology</i> B.A., Depauw University |
| Nancy Rapoport A.B., University of Rochester M.S., University of Pennsylvania M.S., University of Massachusetts | <i>Biology</i> | *Denise Ryan <i>Dental Hygiene</i> R.D.H., Forsyth School of Dental Hygiene B.S., Boston University M.S., Columbia University |
| Sharon Raverta B.A., American International College M.A., American International College | <i>Biology</i> | *Alfred St. Onge <i>Data Processing Technology</i> B.S., American International College M.Ed., Westfield State College |
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| Katharine Reichert B.A., Drew University M.S., Florida State University | <i>Director of Library Services</i> | David Sarrette <i>Director of Veterans' Affairs</i> A.A., Springfield Technical Community College |
| Jewel Rentzschke <i>Chairwoman, Division of Humanities</i> B.S., American International College M.A., Mount Holyoke College | | Bert Scannapieco <i>Chairman, Division of Service Technologies</i> B.A., American International College J.D., Western New England College |
| *Siegfried Rentzschke B.A., American International College M.A., Southern Illinois | <i>Economics; German</i> | Andrew Scibelli <i>Biological Sciences</i> B.A., St. Anselm's College M.Ed., Boston State College |
| Dennison Rice B.A., Calvin Coolidge College of Liberal Arts M.A., Emerson College | <i>English</i> | Carmelo Scuderi <i>Advanced Metal Machining</i> B.S.M.E., University of Massachusetts |
| Joan Richers R.N., Beverly Hospital School of Nursing | <i>College Health Nurse</i> | Patricia Shea <i>Nursing</i> R.N., Misericordia Hospital B.S., University of Dayton M.S., University of Massachusetts |
| *Kenneth Rillings A.A.S., Long Island Agricultural & Technical Institute B.A., Hofstra University M.S., University of Massachusetts Ph.D., University of Massachusetts | <i>Chemistry</i> | Stanley Shore <i>Chemistry</i> B.S., Tufts University Ph.D., University of Massachusetts |
| Michael Ritzen | <i>English</i> | Christine Sickle <i>Early Childhood Education</i> M.Ed., Univ. of Hartford |
| | | Lawrence Slezak <i>Art/Graphic Arts</i> B.S., State University of New York at Buffalo M.F.A., University of Massachusetts |

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| Kirk Smallman | <i>Telecommunications Technology</i> | Essie Thomas | <i>Cosmetology</i> |
| A.A., Pasadena City College | | Certificate, Lincoln High Vocational | |
| B.A., Antioch College | | | |
| M.A., University of Southern California | | | |
| *Gordon Smith | <i>Radiologic Technology</i> | Robert Tinker | <i>Physics/Mathematics</i> |
| R.T., Manchester College of Technology (U.K.) | | B.A., Swarthmore College | |
| J. Edward Smith | <i>Associate Dean of Continuing Education</i> | M.S., Stanford University | |
| B.A., State University College, Brockport N.Y. | | Ph.D., Massachusetts Institute of Technology | |
| M.S., State University College, Brockport N.Y. | | | |
| Daniel Smola | <i>Environmental Technology</i> | John Tullock Jr. | <i>Landscape Technology</i> |
| B.S.M.E., University of Massachusetts | | B.S., University of Massachusetts | |
| B.S.E.vE. University of Massachusetts | | M.L.A., University of Michigan | |
| Stanley Speer | <i>Social Sciences</i> | William Tuthill | <i>Civil Engineering Technology</i> |
| B.A., San Jose State College | | B.S.C.E., Union College | |
| M.A., San Jose State College | | M.B.A., University of Massachusetts | |
| Ph.D., University of Connecticut | | | |
| John Spinetti | <i>Math & Chemistry</i> | *Albert Valentine | <i>Fire Protection & Safety Tech.; OSHA Program</i> |
| B.S., University of Massachusetts | | A.S., Springfield Technical Community College | <i>Administrator</i> |
| M.S., University of Massachusetts | | Cert., Quinsigamond Community College | |
| Ph.D., University of Massachusetts | | B.S., University of Massachusetts | |
| Edward P. Stefanik | <i>Dean of Administration</i> | Mitchell Walkowicz | <i>Electronic Technology</i> |
| B.S., U.S. Military Academy, West Point, N.Y. | | B.S.Ed., Westfield State College | |
| M.S., Texas A & M University | | | |
| M.B.A., Boston University | | | |
| James Stewart | <i>Occupational Safety and Health Technology</i> | Oliver Wallock | <i>Engineering Science Transfer</i> |
| A.A., Holyoke Community College | | B.S., University of Connecticut | |
| B.S., Univ. of Massachusetts | | M.S., University of Connecticut | |
| M.A.T., Univ. of Massachusetts | | | |
| Ronald Stone | <i>Electronics Technology</i> | * John Warner | <i>Civil Engineering Technology</i> |
| A.S., Springfield Technical Community College | | B.S.C.E., University of Massachusetts | |
| | | M.B.A., Western New England College | |
| Rose Sullivan | <i>Secretary to the President</i> | *Virginia Weinle | <i>Secretarial Sciences</i> |
| O'Connell's Business College | | B.A., University of Michigan | |
| | | M.B.A., American International College | |
| Audrey Sumner | <i>Biological Sciences</i> | Stephen Weisner | <i>Sociology</i> |
| B.A., Vassar College | | A.A., Rockland Community College | |
| M.S., University of Pennsylvania | | B.A., Richmond College | |
| | | M.A.T., University of Massachusetts | |
| Carol Szlachetka | <i>Dental Assistant</i> | *William White | <i>Engineering Science Transfer</i> |
| R.D.H., Springfield Technical Community College | | B.S.Ch.E., University of Connecticut | |
| | | M.S.Ch.E., Rensselaer Polytechnic Institute | |
| Lynn Tallman | <i>Radiologic Technology</i> | R. Roy Whitney | <i>Physics</i> |
| R.T., Pittsfield General Hospital | | B.A., Univ. of Oregon Honors College | |
| | | Ph.D., Stanford University | |
| Jennett Teece | <i>Biological Sciences</i> | Jeannette Williams | <i>Medical Laboratory Technician</i> |
| A.B., Mt. Holyoke College | | B.S., University of Massachusetts | |
| A.M., Oberlin College | | M.T., (A.S.C.P.) | |
| Thomas Tetlow | <i>Data Processing Technology</i> | * Robert Yavin | <i>Mathematics</i> |
| B.S., American International College | | B.S., Central Connecticut State College | |
| M.B.A., Western New England College | | M.A., Bowling Green State University | |
| | | Ph. D., University of Connecticut | |
| Carolyn Tetrault | <i>English</i> | Juris Zagarins | <i>Engineering/Science Transfer</i> |
| B.A., Emmanuel College | | B.S., Tufts University | |
| M.A., Boston College | | | |
| Ernest Therrien | <i>Business Administration</i> | Raphael Zoeller | <i>Counselor</i> |
| B.A., University of Maine | | B.S., US Naval Academy | |
| M.A., Fordham University | | M.A., Jackson College | |
| | | Ed.M., Tufts University | |
| | | Charles Zumwalt | <i>Placement Director</i> |
| | | B.S., Oregon State University | |

CLINICAL FACULTY - HEALTH EDUCATION

| | | | |
|--|--|--|---|
| Mrs. Rose Anderson, R.N. Clinical Instructor | <i>Supervisor of Obstetrics Wesson Women's Div., Bay State Med. Ctr.</i> | Mrs. Jean Cushing, R.N. Clinical Instructor | <i>Instructor Bay State Medical Center</i> |
| Lurleen Bailey, R.D.H. Clinical Instructor | <i>Dental Hygienist University of Connecticut</i> | Dr. Robert Dann Associate Clinical Prof. | <i>Chief of Nuclear Medicine Mercy Hospital</i> |
| Mr. Steve Bara Clinical Instructor | <i>Supervisor, Respiratory Therapy Springfield Div., Bay State Med. Ctr.</i> | Mrs. Jean DelVisco Clinical Instructor | <i>Chief Physical Therapist Northampton Nursing Home</i> |
| Mrs. Joyce Baron, R.N. Clinical Instructor | <i>Supervisor of O.R. Bay State Medical Center</i> | Mr. David Demers Clinical Instructor | <i>Coordinator, Volunteer Servs. Dept. of Public Welfare, Reg. 1</i> |
| Mr. John Bellows Clinical Instructor | <i>Training Specialist Work Opportunity Center</i> | Mr. Robert Dranka Clinical Instructor | <i>Executive Director Crossroads</i> |
| Mr. Steven I. Bishop Clinical Instructor | <i>Representative, Prof. Servs. Procter and Gamble Co.</i> | Ms. Jane Drennan Clinical Instructor | <i>Supervisor, Out-Patient Dept. Springfield Div., Bay State Med. Ctr.</i> |
| Mr. Robert Brennan, M.T. Clinical Instructor | <i>Laboratory Administrator Cooley Dickinson Hospital</i> | Ms. Bettirose Eisner Clinical Instructor | <i>Teacher Comm. Clinical Nursery School, Springfield</i> |
| Ms. A. Brown Clinical Instructor | <i>Teacher Comm. Clinical Nursery School, E. Long.</i> | Mrs. Julie Ely, A.R.R.T. Clinical Instructor | <i>Clinical Director, Respiratory Therapy Springfield Div., Bay State Med. Ctr.</i> |
| Mr. Richard Brown Clinical Instructor | <i>Principal Children's Study Home</i> | Mr. John Enko, RPT Clinical Instructor | <i>Chief Physical Therapist Wesson Mem. Div., Bay State Med. Ctr.</i> |
| Sherri Burrell Clinical Instructor | <i>Educational Coordinator Springfield Day Nursery</i> | Mrs. Florence Ethier, R.N. Clinical Instructor | <i>Supervisor, O.R. Ludlow Hospital</i> |
| Mr. Richard Buzzé, C.R.T.T. Clinical Instructor | <i>Tech. Director, Resp. Therapy Noble Hospital</i> | Dr. Henry Falk Associate Clinical Professor | <i>Dentist Western Mass. Hospital</i> |
| Mr. Raymond Capers, M.T. Clinical Instructor | <i>Chief Technologist Noble Hospital</i> | Mrs. Kathleen Ferrari, R.N. Clinical Instructor | <i>Supervisor, O.R. Harrington Memorial Hospital</i> |
| Ms. Marguerite Carson Clinical Instructor | <i>Administrative Director Westfield Area Mental Health Center</i> | Mrs. Constance Foley, R.N. Clinical Instructor | <i>Supervisor, O.R. Holyoke Hospital</i> |
| Susan Catanzarita, R.D.H. Clinical Instructor | <i>Dental Hygienist Holyoke School System</i> | Mr. Al Friedman Clinical Instructor | <i>Asst. Director, Respiratory Therapy Mercy Hospital</i> |
| Mrs. Karen Chaffee Clinical Instructor | <i>Chief Physical Therapist Soldiers Home, Holyoke</i> | Karen Gallagher, R.D.H. Clinical Instructor | <i>Dental Hygienist Brightwood Health Center</i> |
| Mr. George Clark Clinical Instructor | <i>Supervisor for Special Ed. Springfield Public Schools</i> | Dr. Peter Giraud Associate Clinical Prof. | <i>Medical Doctor Private Practice</i> |
| Judy Clark Clinical Instructor | <i>Educational Director Chicopee Head-Start</i> | Dr. William Girotti Associate Clinical Prof. | <i>Oral Surgeon Private Practice</i> |
| Mr. Irving Cohen Clinical Instructor | <i>Business Manager Liberty Medical Associates</i> | Dr. Stanley Glasser Associate Clinical Prof. | <i>Medical Advisor, Respiratory Mercy Hospital</i> |
| Miss Jean Connors, R.N. Clinical Instructor | <i>Head Nurse Wesson Mem. Div., Bay State Med. Ctr.</i> | Ms. Bonnie Gould Clinical Instructor | <i>Supervisor, EKG Dept. Wesson Mem. Div., Bay State Med. Ctr.</i> |
| Mr. Charles Cosgrove, ARIT Clinical Instructor | <i>Chief Therapist Holyoke Hospital</i> | Ms. Phyllis Graham Clinical Instructor | <i>Supervisor Springfield Div., Bay State Med. Ctr.</i> |
| Mr. Timothy Crimmins Clinical Instructor | <i>Representative Third National Bank</i> | Dr. Robert A. Grugan Clinical Professor | <i>Chief Radiologist Springfield Div., Bay State Med. Ctr.</i> |
| Mr. Dennis Croll Clinical Instructor | <i>Dental Technician Associated Dental Laboratories</i> | Beverly Hallgren Clinical Instructor | <i>Wilbraham School System</i> |
| Ms. Jean Crothers, RPT Clinical Instructor | <i>Supervisor, Student Clinical Northampton Nursing Home</i> | Mrs. Linda Harwood, RPT Clinical Instructor | <i>Chief Physical Therapist Mass. Rehabilitation Hospital</i> |
| | | Mr. Michael Hebert Clinical Instructor | <i>Clinical Instructor, Respiratory Therapy Wesson Mem. Div., Bay State Med. Ctr.</i> |

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|---|---|---|---|
| Mr. Jake Hellinger Clinical Instructor | <i>Sales Representative Dental-Eze</i> | Ms. Jessica Mason Clinical Instructor | <i>Supervisor, Out-Patient Dept Wesson Mem. Div., Bay State Med. Ctr.</i> |
| Mr. David Heritage, R.P.T. Clinical Instructor | <i>Chief Physical Therapist Franklin County Public Hospital</i> | Mr. Paul Matthews, A.R.R.T. Clinical Instructor | <i>Tech. Director, Resp. Therapy Providence Hospital</i> |
| Ms. Jean Hickey, R.N. Clinical Instructor | <i>O.R., Instructor Providence Hospital</i> | Ms. Mary McGrath, CDA Clinical Instructor | <i>President American Dental Assistants Assn.</i> |
| Mr. Lester H. Hill Clinical Instructor | <i>Executive Director American National Red Cross</i> | Mrs. Eleanor McQueeney, R.P.T. Clinical Instructor | <i>Supervisor Lakeville Hospital</i> |
| Ms. Diane Hockman, R.N. Clinical Instructor | <i>Supervisor, Emergency Room Springfield Div., Bay State Med. Ctr.</i> | Mr. Jay Mercer Clinical Instructor | <i>Executive Director Hill, Inc.</i> |
| Mrs. Debbie Hudley, R.P.T. Clinical Instructor | <i>Chief Physical Therapist Western Mass. Hospital</i> | Ms. Ruth Mercer Clinical Instructor | <i>Executive Director Chicopee Nursing Home</i> |
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| Dr. Irving Jacobs Associate Clinical Prof. | <i>Superintendent Northampton State Hospital</i> | Ruth Newhouse, D.A. Clinical Instructor | <i>Nurse Home Care Corporation</i> |
| Dr. Carl Janovsky Associate Clinical Professor | <i>Medical Doctor Private Practice-Pediatrics</i> | Joan Noonan, R.N., Clinical Instructor | <i>Nurse Home Care Corporation</i> |
| Sr. Mary Joan of Arc Clinical Instructor | <i>Chief Physical Therapist Farren Memorial Hospital</i> | Dr. Rex O'Connor Associate Clinical Prof. | <i>Director of Medical Education Springfield Div., Bay State Med. Ctr.</i> |
| Dr. William E. Jones Clinical Instructor | <i>Superintendent Belchertown State School</i> | Mrs. Joan Ogronik Clinical Instructor | <i>Student Coordinator Berkshire Rehabilitation Center</i> |
| Ms. Wendy Keyser Clinical Instructor | <i>Coordinator, Student Volunteers Northampton State Hospital</i> | Ms. Ellen Peyton, R.P.T. Clinical Instructor | <i>Student Supervisor Leonard-Morse Hospital</i> |
| Ms. Carol Kinsley Clinical Instructor | <i>Coordinator School Volunteers for Springfield</i> | Mr. Thomas Philpotte Clinical Instructor | <i>Principal Our Lady of Providence Children's Ctr.</i> |
| Dr. John Landis Associate Clinical Professor | <i>Respiratory Therapy Bay State Medical Center</i> | Mr. Joseph Piepul Clinical Instructor | <i>Supervisor, Out-Patient Lab., Springfield Div., Bay State Med. Ctr.</i> |
| Mr. James Lewis Clinical Instructor | <i>Asst. Director, Respiratory Therapy Providence Hospital</i> | Dr. L.H. Plotkin Associate Clinical Professor | <i>Senior Partner Pioneer Valley Pediatrics</i> |
| Ms. June Lucivero, R.P.T. Clinical Instructor | <i>Director, Physical Therapy St. Vincent's Hospital</i> | Ms. Cheryl Popp Clinical Instructor | <i>Teacher Comm. Clinical Nursery School, Holyoke</i> |
| Mr. Edward J. Lush Clinical Instructor | <i>Representative L.D. Caulk Company</i> | Mr. George Poulin Clinical Instructor | <i>Laboratory Administrator Harrington Memorial Hospital</i> |
| Mr. Joseph Mack Clinical Instructor | <i>Chief Physical Therapist Mercy Hospital/Berkshire Rehab. Ctr.</i> | Dr. Kristen Raman Asso. Clinical Prof. | <i>Director, Pulmonary Serv. Wesson Memorial Div., Bay State Med. Ctr.</i> |
| Dr. Rudi Magnone Clinical Instructor | <i>Regional Administrator Dept. of Mental Health Region 1</i> | Alice Rivest, R.D.H. Clinical Instructor | <i>Dental Hygienist Chicopee School System</i> |
| Dr. George Mannix Clinical Instructor | <i>Dentist Private Practice</i> | Ms. Margie Rodd, R.P.T. Clinical Instructor | <i>Student Supervisor University Health Services, U/Mass.</i> |
| Mr. Robert Marsh, M.T. Clinical Instructor | <i>Laboratory Administrator North Adams Regional Hospital</i> | Ms. Genevieve Roos, R.N. Clinical Instructor | <i>Supervisor, Clinic Mercy Hospital</i> |
| Mr. James Martin Clinical Instructor | <i>Coordinator, Educ. & Training Veterans Administration Hospital</i> | Dr. Ronald Rosen Clinical Instructor | <i>Superintendent Monson State Hospital</i> |
| | | Ms. Kim Ryan, R.P.T. Clinical Instructor | <i>Chief Physical Therapist Mayflower House Nursing & Child Care Ctr.</i> |

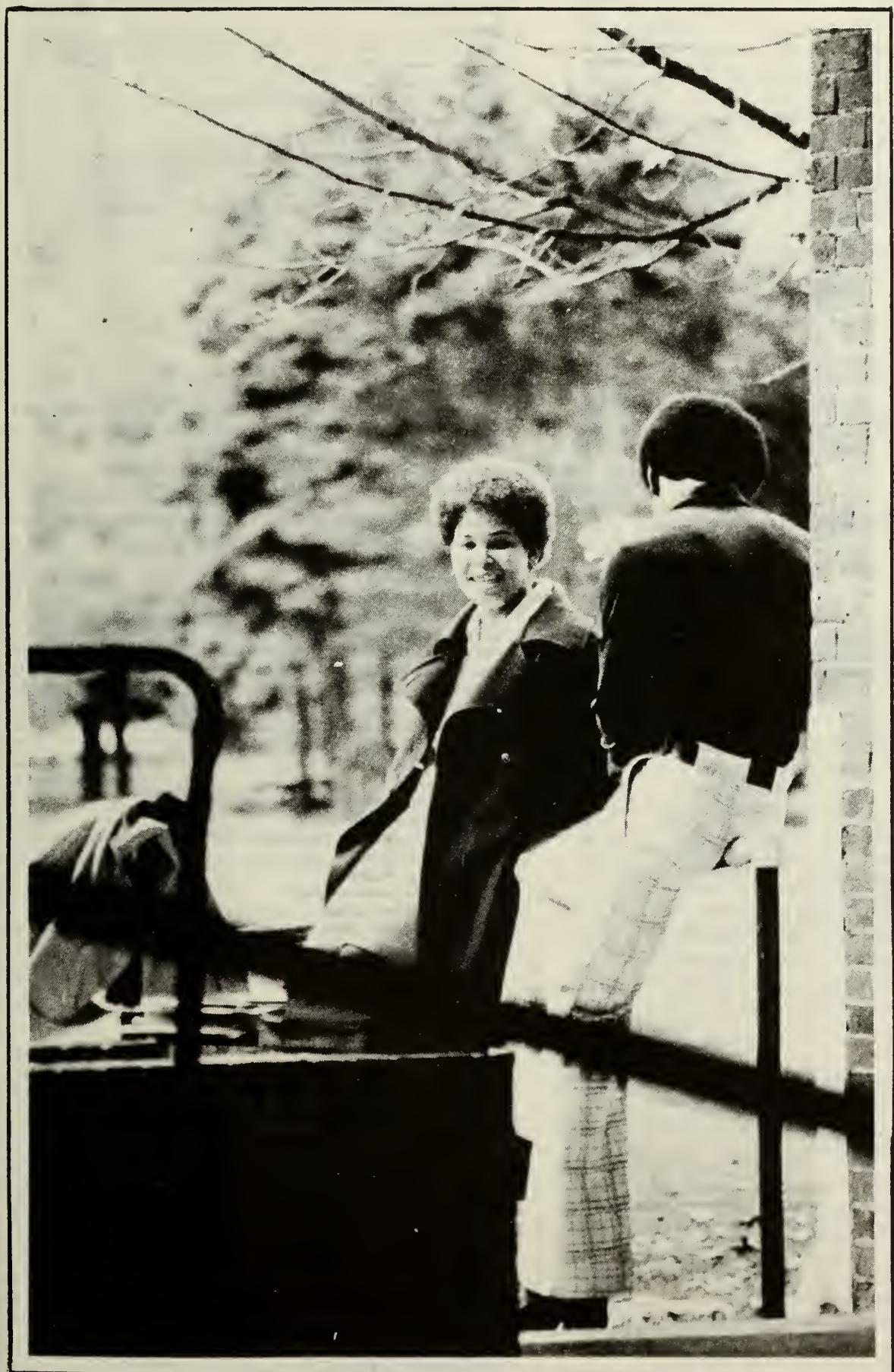
| | | | |
|--|--|--|---|
| Mrs. Elaine Scagel, RPT Clinical Instructor | <i>Chief Therapist</i> <i>Cooley Dickinson Hospital</i> | Gail Trusick Clinical Instructor | <i>Coordinator</i> <i>Goodwill Industries</i> |
| Mary Schnepp, R.D.H. Clinical Instructor | <i>Dental Hygienist</i> <i>Monson State Hospital</i> | Dr. John W. Turner Clinical Professor | <i>Radiology</i> <i>Wesson Memorial Div., Bay State Med. Ctr.</i> |
| Mr. Rick Serafino Clinical Instructor | <i>Clinical Instructor</i> <i>Wesson Memorial Div., Bay State Med. Ctr.</i> | Ms. Mary Lou Vinesco Clinical Instructor | <i>Head Nurse</i> <i>Mercy Hospital</i> |
| Ms. Margaret Shanley, R.N., Clinical Instructor | <i>Supervisor, O.R.</i> <i>Mercy Hospital</i> | Ms. Cheryl Vitali, ARRT Clinical Instructor | <i>Clinical Instructor</i> <i>Holyoke Hospital</i> |
| Ms. Lois Siegelman, RPT Clinical Instructor | <i>Chief Physical Therapist</i> <i>University Hospital/Boston Univ. Med. Ctr.</i> | Ms. Karen Walker, RPT Clinical Instructor | <i>Student Supervisor</i> <i>Central Conn. Easter Seal Rehab. Ctr.</i> |
| Mrs. Flora Spencer, R.N. Clinical Instructor | <i>Supervisor O.R.</i> <i>Franklin County Public Hospital</i> | Mrs. Maureen Weems, RPT Clinical Instructor | <i>Chief Physical Therapist</i> <i>New Britian Memorial Hospital</i> |
| Dr. Robert Stein Asso. Clinical Prof. | <i>Radiation Therapist</i> <i>Wesson Memorial Div., Bay State Med. Ctr.</i> | Ms. Ada Weiner Clinical Instructor | <i>Supervisor of Elementary Guidance</i> <i>Springfield Public Schools</i> |
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| Dr. Daniel Teres Associate Clinical Prof. | <i>Director, Intensive Care Unit</i> <i>Springfield Div., Bay State Med. Ctr.</i> | Dr. Said Zu'bi Associate Clinical Prof. | <i>Chief of Nuclear Medicine</i> <i>Springfield Div., Bay State Medical Ctr.</i> |

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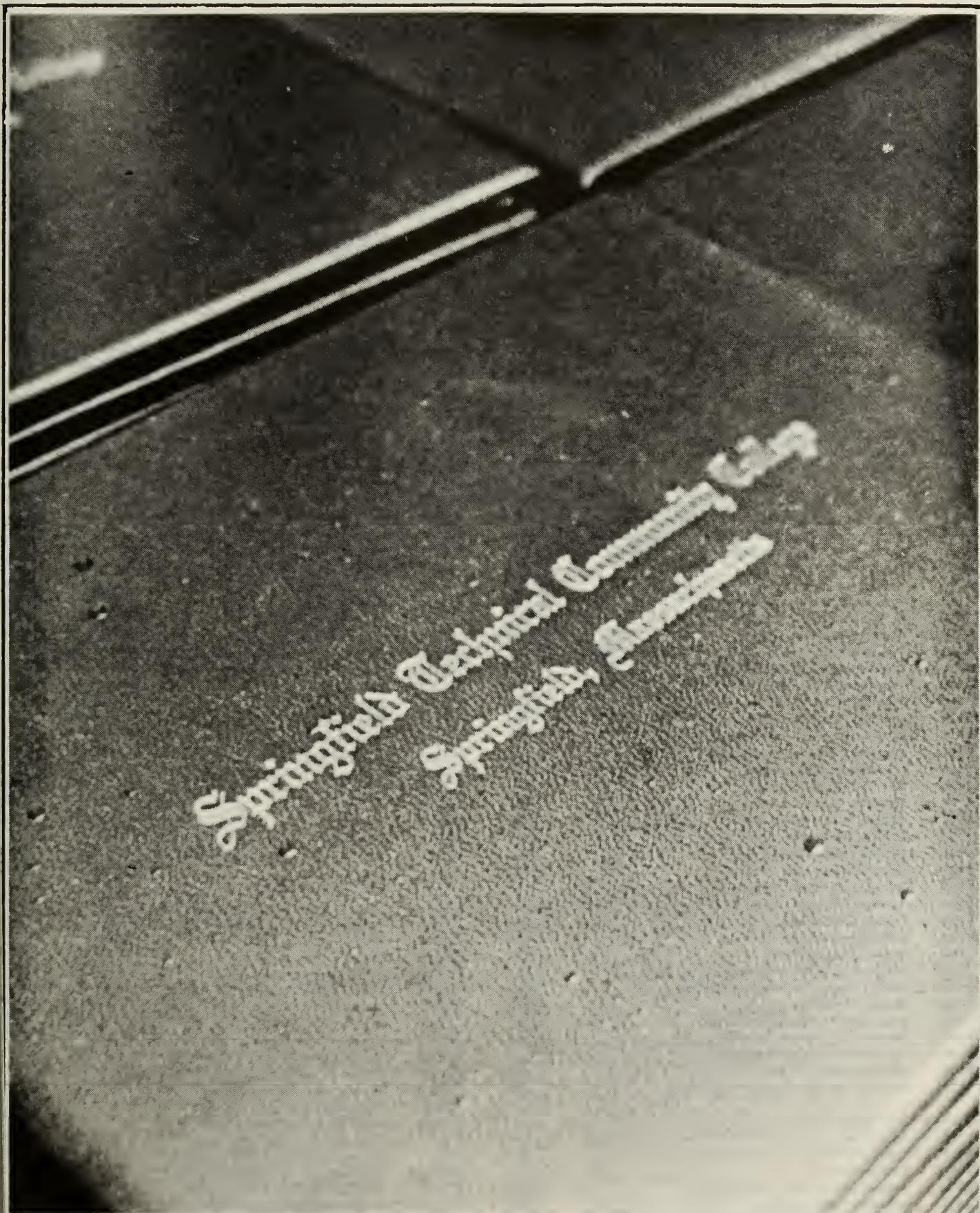
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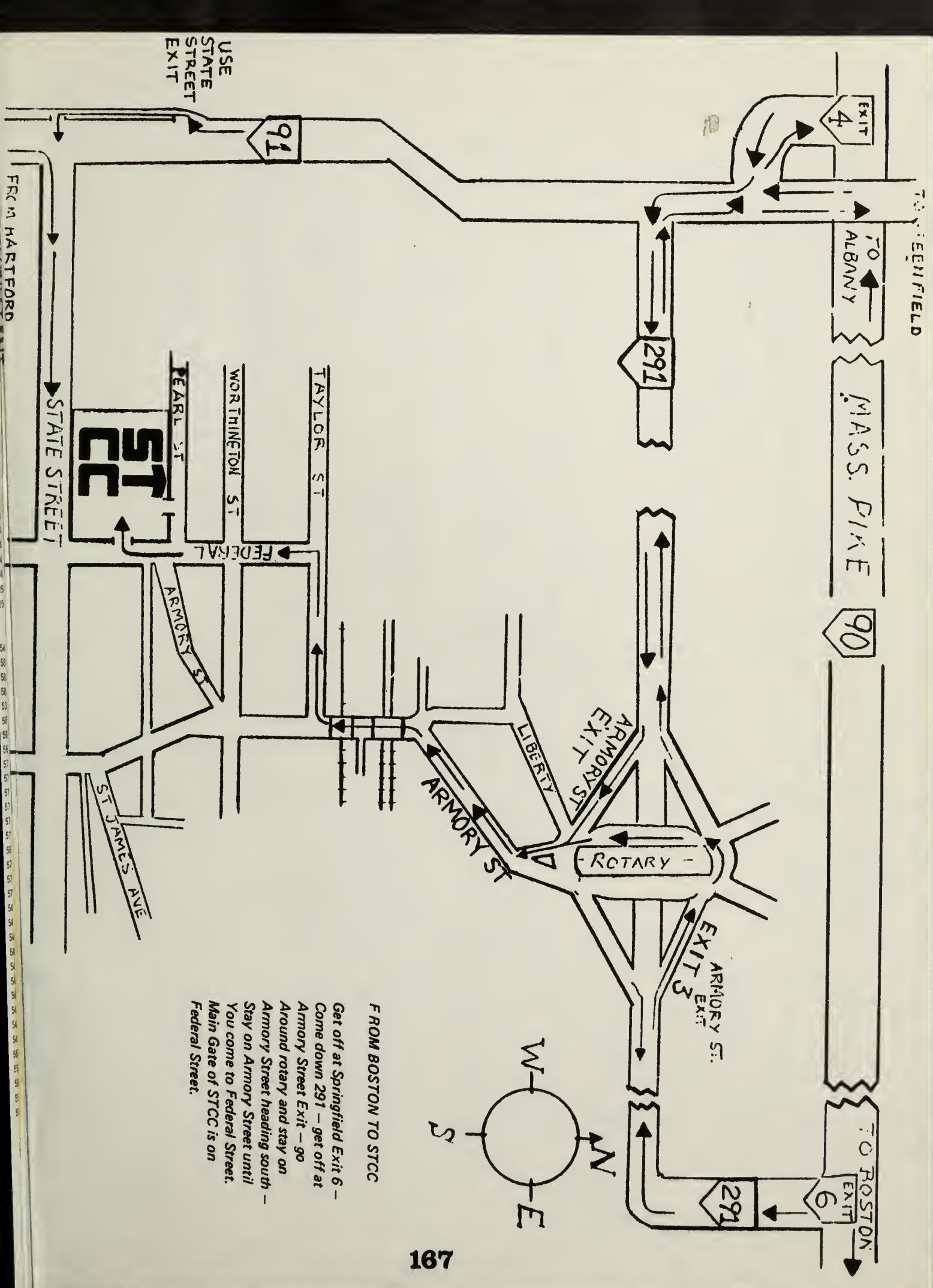
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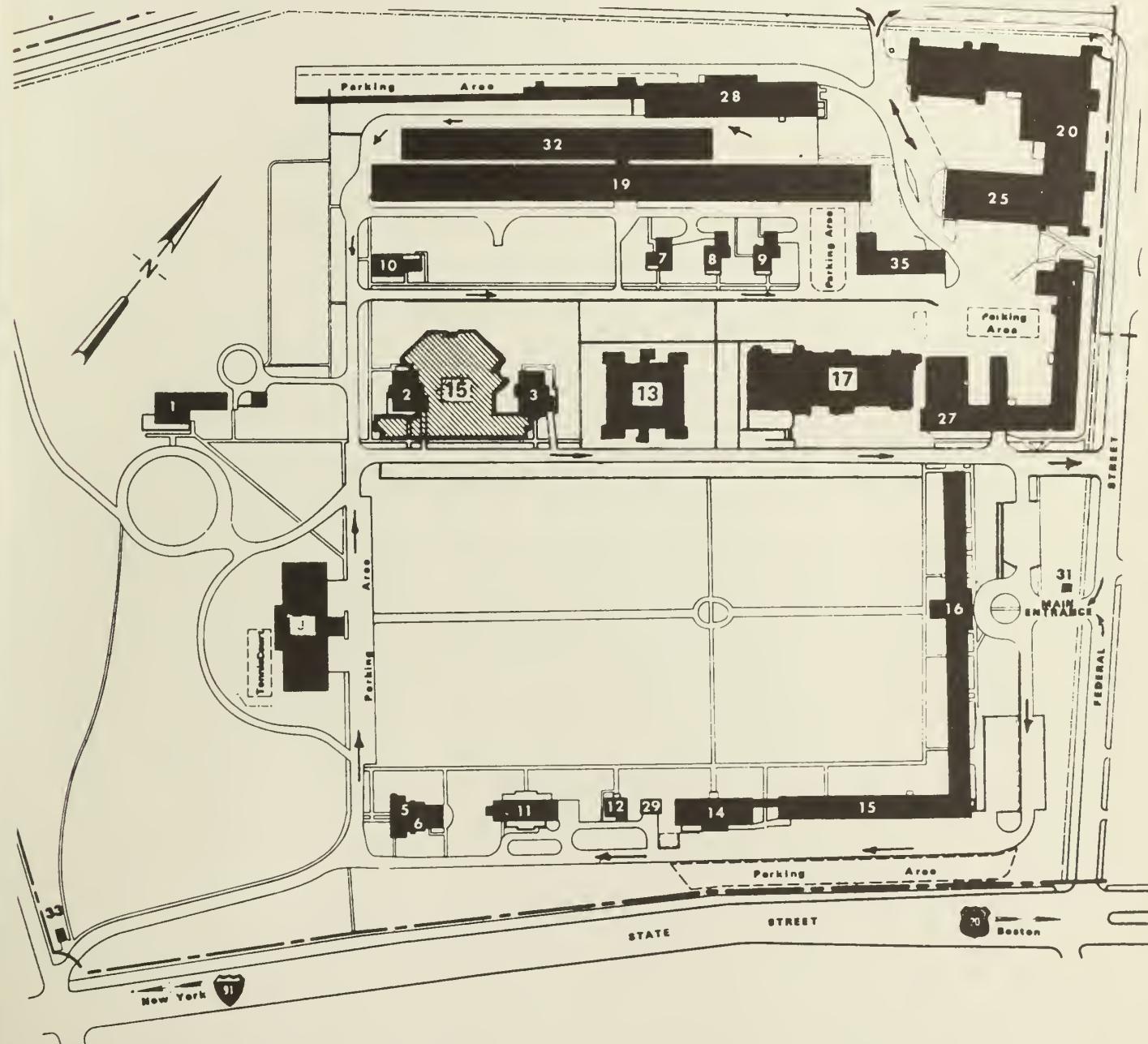
ALPHABETICAL LISTING OF CAMPUS MAP

| AREA | BUILDING NO. | FLOOR | | | | |
|---|--------------|-------------|--------------------------------------|--------|----------|--|
| Administrative Offices | 16 | 1,2 | Secretarial Sciences | 20 | 4 | |
| Admissions Office | 16 | 1,2 | Sheet Metal Lab | 28 | basement | |
| Advanced Metal Machine Technology | 28 | 1 | Site of new Biology/Science Building | new 15 | - | |
| Affirmative Action Officer | 16 | 2 | Small Engine Repair Shop | 19 | 1 | |
| Allied Health Sciences Building | 20 | - | Solar Energy | 17 | 5 | |
| Art Studios | 28 | 2 | Special Student Services | 27 | 1 | |
| Audio-Visual Department | 13 | 3 | Storage | 19 | 1 | |
| Automotive Technology | 25 | 1,2 | Student Government Offices | 27 | 2 | |
| Bilingual Center | 27 | 1 | Student Lounge | 20 | 1 | |
| Bilingual Studies | 20 | 4 | Student Newspaper Offices | 20 | 1 | |
| Biology Department | 20 | 3 | Student Personnel Services | 16 | 1 | |
| Bio-Medical Technology | 20 | 5 | Telecommunications | 13 | 3 | |
| Bookstore | 20 | 1 | The Gallery | 27 | 2 | |
| Business Administration Department | 17 | 2 | Veterans' Club | 9 | 1 | |
| Business Office | 16 | 1 | Warehouse | 19 | 2 | |
| Cafeteria | 20 | 1 | Welding Lab | 28 | basement | |
| Cashier | 16 | 1 | | | | |
| Ceramics and Pottery Studio | 12 | 1 | | | | |
| Chemistry Department | 17 | 5 | | | | |
| Chief of Campus Security Residence | 7 | - | | | | |
| Civil and Landscape Technology Labs | 35 | 1 | | | | |
| Civil Engineering Technology | 27 | 1 | | | | |
| College Nurse | 20 | 2 | | | | |
| Community Affairs Office | 16 | 1 | | | | |
| Computer Center | 17 | 3 | | | | |
| Co-op Office | 16 | 2 | | | | |
| Cosmetology Department | 20 | 4 | | | | |
| Counseling Center | 27 | 1 | | | | |
| Data Processing Technology | old 15 | 1 | | | | |
| Dean of Administration | 16 | 1 | | | | |
| Dean of Faculty | 16 | 2 | | | | |
| Dean of Students | 16 | 1 | | | | |
| Dental Assistant Department | 20 | 2 | | | | |
| Dental Hygiene Department | 20 | 2 | | | | |
| Division of Continuing Education Offices | 16 | 1,2 | | | | |
| Early Childhood Education Center | 5 | 1,2 | | | | |
| Electrical Technology | 20 | mezzanine | | | | |
| Electronics Technology | 17 | 6 | | | | |
| English | 13 | 1,2 | | | | |
| Engineering Transfer Programs | 17 | 3-6 | | | | |
| Environmental Technology | 17 | 2 | | | | |
| Fire Science | old 15 | 1,2 | | | | |
| Garage | 29 | 1 | | | | |
| Gate House - Byers Street (no entrance) | 33 | 1 | | | | |
| Graphic Arts Department | 14 | 1,2,3 | | | | |
| Gun Museum | J | 1 | | | | |
| Gym - shower facilities | 32 | 1 | | | | |
| Heating Plant | 17 | 1,2 | | | | |
| Heat/Power/Air Conditioning Technology | 32 | 1 | | | | |
| Humanities Building | 13 | - | | | | |
| Landscape Technology | 27 | 1 | | | | |
| Languages | 13 | 1 | | | | |
| Laser Optics | 17 | 6 | | | | |
| Law Enforcement | old 15 | 1,2 | | | | |
| Library | 27 | 2 | | | | |
| Machine and Tool Design | old 15 | 3 | | | | |
| Machine Lab | 28 | basement | | | | |
| Main Entrance Gate House - Federal Street | 31 | 1 | | | | |
| Maintenance Garage | 25 | lower level | | | | |
| Maintenance Shop | 27 | basement | | | | |
| Materials Testing Lab | 28 | 2 | | | | |
| Mathematics | 17 | 4 | | | | |
| Mental Health | 20 | 3 | | | | |
| Metallurgical Lab | 28 | 1 | | | | |
| Music | 13 | 1 | | | | |
| Nursing | 20 | 3 | | | | |
| OSHA | old 15 | 1,2 | | | | |
| Over 25 Club | 8 | 1 | | | | |
| Physical Therapy Department | 20 | 3 | | | | |
| Physics Department | 17 | 6 | | | | |
| President's Office | 16 | 2 | | | | |
| Professor's Residence | 6 | 1 | | | | |
| Public Relations Office | 16 | 2 | | | | |
| Quarters 1 - Commandant's Home | 1 | 1 | | | | |
| Quarters 2 - Site of new Biology/Science Building | 2 | 1 | | | | |
| Quarters 3 - Site of new Biology/Science Building | 3 | 1 | | | | |
| Quarters 10 - vacant | 10 | 1 | | | | |
| Quarters 11 - vacant | 11 | 1 | | | | |
| Radiologic, Nuclear and Radiation Therapy | 20 | 3 | | | | |
| Radio Station - WTCC | 16 | 3,4 | | | | |
| Registrar's Offices | 16 | 1,2 | | | | |
| Respiratory Therapy | 20 | 4 | | | | |
| Rifle and Pistol Club | 28 | lower level | | | | |
| Roger L. Putnam Physical Science Building | 17 | | | | | |

NUMERICAL LISTING OF CAMPUS MAP

| BUILDING NO. | AREA |
|--------------|--|
| 1. | Quarters 1 - Commandant's Home |
| 2. | Quarters 2 - Site of new Biology/Science Building 15 |
| 3. | Quarters 3 - Site of new Biology/Science Building 15 |
| 5. | Early Childhood Education Center |
| 6. | Professor's residence |
| 7. | Chief of Campus Security residence |
| 8. | Over 25 Club |
| 9. | Veteran's Club |
| 10. | Quarters 10 - vacant |
| 11. | Quarters 11 - vacant |
| 12. | Ceramics and Pottery |
| 13. | Humanities Building English, Languages, Music, Audio-Visual Department, Telecommunications |
| 14. | Graphic Arts Department |
| old15. | Law Enforcement, Fire Science, Machine and Tool Design, OSHA, Data Processing Technology |
| new15. | Site of new Biology/Science Building |
| 16. | Administrative Offices President, Admissions, Registrar, Business Office, Cashier, Student Personnel Services, Radio Station, Dean of Faculty, Dean of Students, Dean of Administration, Public Relations, Co-op Office, Affirmative Action Officer, Community Affairs Office, Division of Continuing Education. |
| 17. | Roger L. Putnam Physical Science Building Engineering Transfer Programs, Mathematics, Physics, Chemistry Business Administration, Environmental Technology, Electronics, Laser Optics, Solar Energy, Heating Plant, Computer Center. |
| 19. | Storage and warehouse - small engine repair shop |
| 20. | Allied Health Sciences Building Cafeteria; Bookstore; Student Lounge; Student Newspaper Office; Physical Therapy; Dental Assistant; Dental Hygiene; Biology; Electrical Technology; Radiologic; Nuclear and Radiation Therapy; Bio-Medical Technology; Mental Health; Cosmetology; Nursing; Respiratory Therapy; Secretarial Sciences; Bilingual Studies; College Nurse. |
| 25. | Automotive Technology, Maintenance Garage |
| 27. | Civil Engineering Technology, Landscape Technology, Special Student Services, Maintenance Shop, The Gallery, Student Government Offices, Library, Bilingual Center, Counseling Center, |
| 28. | Advanced Metal Machine Technology, Machine Lab, Welding Lab, Sheet Metal Lab, Metallurgical Lab, Materials Testing Lab, Art Studios, Rifle and Pistol Club. |
| 29. | Garage |
| 31. | Main Entrance Gate House - Federal Street |
| 32. | Heat/Power/Air Conditioning Technology, Gym - Shower Facilities |
| 33. | Gate House - Byers Street (no entrance) |
| 35. | Civil and Landscape Lab |
| J. | Gun Museum |

CAMPUS MAP



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